



CITY OF CARDIFF.

ANNUAL REPORT

FOR 1911

OF THE

MEDICAL OFFICER OF HEALTH.

EDWARD WALFORD, M.D., D.P.H., F.R.MET.SOC.,

MEDICAL OFFICER OF HEALTH, CITY AND PORT OF CARDIFF ;

MEDICAL OFFICER, CARDIFF EDUCATION AUTHORITY.

Printed by Order of the Urban Sanitary Authority.

CARDIFF :

S. GLOSSOP & SONS,
NEW STREET PRINTING WORKS.

1912.



AMERICAN BUREAU

OF THE HISTORY OF THE UNITED STATES

AND OF THE HISTORY OF THE WORLD

NEW YORK: AMERICAN BUREAU OF THE HISTORY OF THE UNITED STATES

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CITY OF CARDIFF.

CITY HALL,
CARDIFF,
May, 1912.

TO THE RT. HON. THE LORD MAYOR, ALDERMEN, AND MEMBERS
OF THE CITY COUNCIL OF CARDIFF.

MY LORD MAYOR AND GENTLEMEN,

I have the honour to present to you my Twenty-fourth Annual Report.

This Report deals with the health of the City of Cardiff, and with the administrative work carried out in the Department of the Medical Officer of Health during the year 1911.

The following is an extract from the General Order of the Local Government Board, dated 13th December, 1910, relating to the Annual Reports of Medical Officers of Health.

“ He shall as soon as practicable after the thirty-first day of December in each year make an Annual Report to the Council, up to the end of December, on the sanitary circumstances, the sanitary administration, and the vital statistics of the district.

In addition to any other matters upon which he may consider it desirable to report, his Annual Report shall contain the information indicated in the following paragraphs; together with such further information as we may from time to time require:—

(a)—An account of any influences threatening the health of the district, the prevalence of infectious or epidemic diseases therein, and the measures taken for their prevention.

(b)—An account of all general and special inquiries made during the year.

(c)—An account of the work performed by the Inspector of Nuisances during the year, including the statement supplied in pursuance of Article XX. (16) of this Order.

(d)—A statement as to the conditions affecting the wholesomeness of the milk produced or sold in the district.

(e)—A statement as to the conditions affecting the wholesomeness of foods for human consumption, other than milk, produced or sold in the district.

(f)—A statement as to the sufficiency and quality of the water supply of the district and of its several parts, and in areas where the supply is from waterworks, information as to whether the supply is constant or intermittent.

(g)—A statement as to the pollution of rivers or streams in the district.

(h)—A statement as to the character and sufficiency of the arrangements for the drainage, sewerage and sewage disposal in all parts of the district.

(i)—A statement as to the privy, water-closet, and other closet accommodation in the district, including information as to the approximate number of each type of privy and closet.

(j)—A statement as to the character and efficiency of the arrangements for the removal of house-refuse, and the cleansing of earthclosets, privies, ashpits, and cesspools in the district.

(k)—A statement with regard to the housing accommodation of the district as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the Council under the Housing, Town Planning, &c., Act, 1909, bearing on the public health.

(l)—A statement as to the vital statistics of the district, including a tabular statement, in such form as we may from time to time direct, of the sickness and mortality within the district.

(m)—Where the Medical Officer of Health is appointed by the Council of a County Borough, or by a Council having delegated powers under the Midwives Act, 1902, a statement as to the administration of that Act in the district."

Section 132 of the Factory and Workshop Act, 1901, requires that the Medical Officer of Health shall report specifically on the administration of this Act in Workshops and Workplaces, and that he shall send a copy of this report to the Secretary of State.

The Report also includes a statement prepared by the Inspector of Nuisances, who is required by the Board's General Order, Article XX. (16), to furnish the Medical Officer of Health with a tabular statement containing the following particulars:—

- (a) The number and nature of inspections made by him during the year.
- (b) The number of notices served during the year, distinguishing statutory from informal notices.
- (c) The result of the service of such notices.

According to the Preliminary Report of the Census of 1911, the City of Cardiff comprises 6,373 statute acres, including land and inland water, 38,077 families or separate occupiers, and a population of 182,280, being an increase of 17,947 in the inter-censal period since 1901. This increase was equal to 10·9 per cent., as compared with 27·5 per cent. between 1891 and 1901.

The following table shows the number of separate occupiers and the population in each municipal ward in the City, according to the Census, 1911:—

TABLE 1.

MUNICIPAL WARD.	SEPARATE OCCUPIERS.	POPULA- TION.
Central	1,929	11,333
South	2,082	10,119
Cathays	4,905	22,067
Adamsdown	2,752	13,987
Riverside	4,243	19,946
Canton	4,714	22,074
Grangetown	4,713	23,139
Roath	3,961	17,982
Park	5,059	23,285
Splott	3,719	18,348
Totals	38,077	182,280

The following table shows the density of the population, or the average number of persons per acre, within the City.

TABLE II.

Density of Population during the past ten years :—

Year.						Persons per acre.*
1902	...	...	...	...	...	26.1
1903	...	...	...	...	...	26.4
1904	...	...	...	...	...	26.6
1905	...	...	...	...	...	26.9
1906	...	...	...	...	...	27.2
1907	...	...	...	...	...	27.5
1908	...	...	...	...	...	27.8
1909	...	...	...	...	...	28.1
1910	...	...	...	...	...	28.4
1911	...	...	...	...	...	28.6

* Calculated on the basis of estimates of the population, and on area of 6,373 acres.

TABLE III.

Number of houses and shops in Cardiff for which plans have been passed in each year since 1894 :—

Year ended August 31st, 1895	...	...	1,507
" " " 1896	...	...	1,196
" " " 1897	...	...	1,247
" " " 1898	...	...	1,258
" " " 1899	...	...	624
" " " 1900	...	...	267
" " " 1901	...	...	230
" " " 1902	...	...	185
" " " 1903	...	...	398
" " " 1904	...	...	228
" " " 1905	...	...	389
" " " 1906	...	...	291
" " " 1907	...	...	222
" " " 1908	...	...	307
" " " 1909	...	...	377
" " " 1910	...	...	307
" " " 1911	...	...	208

PHYSICAL FEATURES OF DISTRICT.—The City of Cardiff comprises 6,373 acres of land and inland water, exclusive of foreshore and tidal water, and is situated upon impervious strata, consisting for the most part of new red marl; resting upon this formation are the more superficial deposits of river gravel, more or less saturated with water. A gradual rise in the gravel takes place towards the north, so as to attain a level of nearly 40 feet above Ordnance Datum in Queen Street and the Newport Road, and 50 feet at Cathays, where resting on the red marl, it forms a deposit to a depth varying from 8 to 20 feet of good building land, upon which the greater part of the north-east side of the town is constructed. The part of the town situated on the west of the River Taff is, in the northern or Canton District, on an alluvial deposit of clay, sand, and gravel; the southern, or Grange-town ward, being on the estuarine mud—a stiff blue clay of marine origin, which forms also the soil in the neighbourhood of the Docks and South Splott. This low-lying part of the town is now protected from the sea and tidal waters by banks, and has in many parts been raised by the deposit of made soil composed of ashes and house refuse collected by the public scavengers. The southern part of the town therefore consists of alluvial land at a very slight elevation above the ordinary sea level near the mouths of the Rivers Rhymney, Taff, and Ely.

The Rhymney and Ely Rivers, at the points at which they enter the Bristol Channel, form respectively the eastern and western limits of the City; the Taff flowing in a southerly direction forms a natural division of the town into east and west, each having a separate drainage system.

The area of the City of Cardiff is distributed in Registration Sub-districts as follows :—East Cardiff, 481 acres, Central Cardiff, 3,832 acres, and West Cardiff, 2,060 acres. The City is also divided into ten Municipal Wards containing the civil parishes of Canton, Roath, St. John, and St. Mary.

Cardiff is well provided with parks and open spaces, forming admirable recreation grounds and breathing spaces for the inhabitants of the crowded parts of the town. Those places, which belong to the public and are under the control of the Cardiff Corporation, comprise a total area of nearly 400 acres, as follows :—

						Acreage.		
						Exclusive of	Roads.	
						Acres.	R.	P.
Roath Park	...	...	...	...	...	166	0	0*
Victoria Park	...	...	...	...	...	19	2	36
Canton Park	...	...	...	...	...	12	0	0
Loudoun Square	...	...	...	...	...	1	1	36
Howard Gardens	...	...	...	...	...	1	0	36
Adamsdown Square	...	...	...	...	...	0	1	32
Plasturton Gardens	...	...	...	...	...	0	2	39
Dispenser	„	...	...	...	...	0	3	23
Clare	„	...	...	...	...	0	0	36½
Moorland	„	...	...	...	...	1	2	5½
Grangetown	„	...	...	...	...	3	0	31
Llanbleddian	„	...	...	...	...	0	0	37
Ruthin	„	...	...	...	...	0	0	28
Senghenydd	„	(North and South)	...	...	...	0	1	19
Windsor Esplanade Gardens	...	...	...	...	...	0	1	18
Penylan Gardens	...	...	...	...	...	6	0	0
Waterloo Gardens	...	...	...	...	...	3	0	0
Splott Park	...	...	...	...	...	18	0	0
Llandaff Fields...	...	...	...	...	...	70	3	2
Cathays Park	...	...	...	...	...	60	0	0
Allen's Bank Crescent	Open Space	...	...	...	...	0	1	16
Total						366	2	35

* Including 66 acres outside City boundary.

In addition to the above-named open spaces, the public has, through the generosity of the owners, access to the following parks and fields :—

	A.	R.	P.
Sophia Gardens	43	0	25
Sir David's Field	8	3	19
Cardiff Arms Park	17	3	32

Grangetown Recreation Ground, with an area of 9 acres, 2 roods, is rented by the Corporation.

HOUSING OF THE WORKING CLASSES.—The new Order of the Local Government Board dated December 13th, 1910, relating to the duties of the Medical Officer of Health and to the information to be given in his Annual Report, provides that this Report shall include—“A statement with regard to the housing accommodation of the District as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the Council under the Housing, Town Planning, &c. Act, 1909, bearing on the public health.”

These Regulations require that “The Medical Officer of Health shall include in his Annual Report, information and particulars in tabular form in regard to the number of dwelling houses inspected under and for the purposes of Section 17 of the Act of 1909, the number of dwelling houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the Local Authority with a view to the making of Closing Orders, the number of Closing Orders made, the number of dwelling houses, the defects in which were remedied without the making of Closing Orders, the number of dwelling houses which, after the making of Closing Orders, were put into a fit state for human habitation, and the general character of the defects found to exist. He shall also include any other information and particulars which he may consider desirable in regard to the work of inspection under the said Section.”

TABLE IV.

Statement regarding houses inspected under the Housing, Town Planning, &c. Act, 1909, during the year 1911:—

STREET.	Houses Inspected.	Notices <i>re</i> Defects Served.	Notices <i>re</i> Defects Complied with.	Rent exceeding £26 a year.	No Rent Paid.	Tenants changed since December, 1909.	Houses Vacant.
Allen's Arch	5	...	...	...	...	2	...
Angelina Street	50	42	40	3	...	21	1
Booker Street	14	9	9	...	2	4	...
Bradley Street	40	37	37	1	4	9	...
Bute Lane	5	...	...	...	...	3	...
Byron Street	49	46	30	1	...	17	...
Cairns Street	198	107	86	...	...	56	12
Canal Parade	22	19	15	...	...	12	1
Canal Street	28	16	11	...	...	11	...
Cathays Terrace	30	36	4	1	...	8	...
Clive Place	9	10	9	...	...	3	...
Crofts Street	22	21	19	1	1	4	...
Crown Court	6	...	...	...	...	2	...
David Street	25	17	15	1	1	9	...
Duffryn Street	18	11	9	1	...	6	...
Ellen Street	30	31	31	2	...	6	...
Ethel Street	108	193	160	...	...	39	...
Fern Street	9	16	13	1	...	1	...
Fort Street	13	13	13	...	...	1	...
Fox Street	12	4	4	...	...	6	...
Franklin Street	6	6	2	1	...	1	...
Garth Court	5	4	1	...	...	3	...
Garth Street	16	9	5	...	...	3	...
Gray Street	55	64	54	1	...	6	...
Harris Court	6	...	...	...	...	...	4
Havelock Place	3	3	1	...	1	1	...
Helen Street	66	80	77	...	1	14	...
Hodges Court and Row	8	...	...	...	...	...	...
Little Frederick Street	30	23	20	3	...	14	...
Love Lane	34	26	23	...	...	13	...
Love Lane Court... ..	4	5	5	...	...	1	...
Madras Street	27	24	24	2	...	15	1
Mary Ann Street	41	20	20	4	...	11	...
Milton Street	57	74	43	...	1	23	...
Moon Street	24	16	14	...	...	7	...
Noah Street	7	7	4	...	...	3	...
Nora Street	74	89	80	...	3	17	1
North Street	12	8	5	1	...	3	...
North Loudoun Place	5	3	3	1	...	1	...
North William Street	36	27	22	...	...	13	...
Old Sea Lock	5	2	...	...	1	...	...
Old Sea Lock Court	6	2	2	...	...	1	...
Pellett Street	21	19	15	1	3	6	2
Pendoylan Place	2	1	1	...	...	...	...
Pendoylan Street	30	32	27	1	...	5	1
Peter's Court	2	...	...	...	...	2	...
Roland Street	33	33	25	1	...	4	3

TABLE IV.—continued.

STREET.	Houses Inspected.	Notices <i>re</i> Defects Served.	Notices <i>re</i> Defects Complied with.	Rent exceeding £26 a year.	No Rent Paid.	Tenants changed since December, 1909.	Houses Vacant.
Rosemary Street ...	3	2	2	...	...	2	...
Russell Street ...	44	44	34	2	...	10	...
Shakespeare Street ...	5	3	1	2	...	...	...
South Terrace ...	6	4	4	...	...	2	...
Stanley Street ...	2	...	...	...	...	1	...
Taff Street ...	10	...	...	...	...	4	...
Thomas Court ...	3	...	...	...	...	...	...
Thomas Street ...	45	33	26	2	...	14	2
Tyler Street ...	16	6	6	...	2	5	...
Tyndall Street ...	49	77	47	6	...	6	3
Van Street ...	9	8	2	...	...	5	...
Williams' Court ...	4	...	...	...	...	...	2
Womanby Street ...	5	...	...	1	...	...	2
Totals ...	1,509	1,382	1,100	41	20	436	35

The notices referred to in the foregoing table were served under the Public Health Acts.

Only those houses let after the passing of the Housing, Town Planning, &c., Act, in December, 1909, at a rent not exceeding £26 a year can be dealt with under Section 15 (3) of that Act, as regards their being kept in all respects reasonably fit for human habitation.

TABLE V.

Proceedings taken relating to houses considered to be unfit for human habitation under Section 17 of the Housing, Town Planning, etc. Act, 1909, to the end of the year 1911 :—

STREET.	Houses considered to be unfit for human habitation.	Representations by the Medical Officer of Health.	Closing Orders made.	Houses rendered fit for habitation after Closing Orders.	Demolition Orders made.	Houses rendered fit for habitation after Demolition Orders.	Houses Demolished.
Allen's Arch ...	3	3	3	...	...	...	...
Angelina Street ...	1	1	1	...	...	...	...
Cairns Street ...	6	6	6	...	6	6	...
Canal Street ...	2	2	2	...	2	2	...
Cottages at rear of 55 & 58, Mary Ann Street ...	2	2	2	...	...	...	...
Crown Court ...	6	6	2	...	...	...	...
Harris' Court ...	6	6	6	...	6	...	...
Little Frederick Street ...	1	1	1	...	1	1	...
Love Lane ...	2	2	2	...	2	...	...
Nora Street ...	2	2	2	...	2	2	...
Saltmead Road ...	2	2	2	...	2	2	...
Stanley Street ...	2	2	2	...	...	...	...
Williams' Court (Canal Street) ...	2	2	2	...	2	...	2
Williams' Court (Canal Street) ...	2	2	...	...	2	...	2
Womanby Street ...	5	5	5	...	5	...	...
Totals ...	44	44	38	...	30	13	4

In addition to the representations made by the Medical Officer of Health, reports were presented upon two small groups of houses, the conditions and surroundings of which were in some respects unsatisfactory. One report, dated April, 1911, relates to John Street Court, in which the water closet accommodation was unsuitable, and in which there was an absence of through ventilation. These defects have been remedied as far as possible, as the City Engineer had previously reported that in his opinion it was inexpedient to carry out an Improvement Scheme under Section 39 of the Housing of the Working Classes Act, 1890, a course which had been suggested to the Committee.

A report was presented to the Health Committee on the same date, relating to some houses in Hill's Street and Hill's Terrace, in which it was represented that owing to the closeness and bad arrangement of these houses they should be dealt with by an Improvement Scheme under Section 39 of the Act of 1890. This matter is still under the consideration of the Committee.

A representation was made, dated 4th April, 1911, relating to a cottage at the back of 33, Mary Ann Street, which the Medical Officer of Health regarded as an obstructive building, stopping the ventilation of the house in Mary Ann Street. The Committee were recommended to deal with the obstructive building under Section 38 of the Act of 1890. This matter has been referred to the Town Clerk to report upon the legal and financial aspect of the question, and is still under the consideration of the Committee.

Two appeals were made to the Local Government Board against Closing Orders made by the Sanitary Authority.

On the 16th May, 1911, an Inspector of the Board heard an appeal by the owner of some houses in Crown Court. On the 16th June the Board wrote to the Town Clerk, stating that they confirmed the Closing Order.

On the 1st April, 1911, an appeal to the Board was made by the owner of Harris' Court and Womanby Street against a Closing Order. The appeal was subsequently abandoned, and the Closing Order was enforced.

The following is an extract from a report upon the Housing (Inspection of District) Regulations, 1910, presented to the Health Committee in November, 1911 :—

“ The Act which came into force in December, 1909, is divided into four parts and seventy-six Sections, many of which confer useful powers upon Local Authorities. A brief summary of the more important sections dealing with the powers and duties of these Authorities, with respect to the housing of the working classes is given below.

Many of the Sections of the Housing of the Working Classes Act, 1890 (the principal Act) are repealed by the Act of 1909. Amongst others, Sections 32 and 33, which relate to orders for the closing and demolition of houses unfit for human habitation. The procedure under these Sections has been altered and amended, with a view of giving greater facilities to Local Authorities for dealing with insanitary houses.

Section 17 (1) and (2) of the Housing, Town Planning, &c., Act, 1909, enact that—

(1) It shall be the duty of every local authority within the meaning of Part II. of the principal Act to cause to be made from time to time inspection of their district, with a view to ascertain whether any dwelling-house therein is in a state so dangerous or injurious to health as to be unfit for human habitation, and for that purpose it shall be the duty of the local authority, and of every officer of the local authority, to comply with such regulations, and to keep such records as may be prescribed by the Board.

(2) If, on the representation of the Medical Officer of Health, or of any other officer of the authority, or other information given, any dwelling-house appears to them to be in such a state, it shall be their duty to make an order prohibiting the use of the dwelling-house for human habitation (in this Act referred to as a Closing Order) until in the judgment of the local authority, the dwelling-house is rendered fit for that purpose.

Subsequent Sub-Sections provide for the service of the Closing Order upon every owner of the dwelling-house in respect of which it is made, who, if aggrieved by the Order, may appeal to the Local Government Board within fourteen days after the Order is served upon him. Power is given to the Authority to determine the Closing Order, if they are satisfied that the dwelling-house has been made fit for human habitation.

Section 18 contains the following provisions :—

(1) Where a Closing Order in respect of any dwelling-house has remained operative for a period of three months, the local authority shall take into consideration the question of the demolition of the dwelling-house, and shall give every owner of the dwelling-house notice of the time (being some time not less than one month after the service of the notice) and place at which the question will be considered, and any owner of the dwelling-house shall be entitled to be heard when the question is so taken into consideration.

(2) If upon any such consideration the local authority are of opinion that the dwelling-house has not been rendered fit for human habitation, and that the necessary steps are not being taken with all due diligence to render it so fit, or that the continuance of any building, being or being part of the dwelling-house, is a nuisance or dangerous or injurious to the health of the public or of the inhabitants of the neighbouring dwelling houses, they shall order the demolition of the building.

(3) If any owner undertakes to execute forthwith the works necessary to render the dwelling-house fit for human habitation, and the local authority consider that it can be so rendered fit for human habitation, the local authority may, if they think fit, postpone the operation of the order for such time, not exceeding six months, as they think sufficient for the purpose of giving the owner an opportunity of executing the necessary works.

(4) Notice of an order for the demolition of a building shall be forthwith served on every owner of the building in respect of which it is made, and any owner aggrieved by the Order may appeal to the Local Government Board, by giving notice of appeal to the Board within twenty-one days after the Order is served upon him.

A very important provision of the Act of 1890 has been retained. Section 38 was not repealed by the Act of 1909. This section requires the Medical Officer of Health to represent to the Sanitary Authority the particulars relating to any building in his district, which, although not itself unfit for human habitation, is so situate that by reason of its proximity to, or contact with, any other buildings, it stops the ventilation, or otherwise renders such buildings unfit for habitation or dangerous or injurious to health. On receiving any such representation, the Sanitary Authority are required to cause a report to be made to them as to the cost of pulling down the obstructive building, and acquiring the land, and to take into consideration the representation and report. After hearing the objections, if any, by the owner, the Sanitary Authority must make an order, either allowing the objections or directing that the obstructive building shall be pulled down.

When no appeal is made to the Court of Quarter Sessions (now the Local Government Board) against the Order of the Sanitary Authority, or where an appeal is made and either fails or is abandoned, the lands on which the obstructive building is erected, may be purchased by the Sanitary Authority, unless the owner declares his intention to retain the site, and undertakes either to pull down the obstructive building or to permit the Sanitary Authority to do so, in which case he will retain the site and will receive compensation from the Sanitary Authority for the pulling down of the building. Any dispute as to the amount of compensation may be settled by arbitration.

The procedure under the Act of 1909 is therefore as follows :—

- (a) The inspection of the district by the Officers of the Local Authority with a view to ascertain whether any dwelling houses in that district are unfit for habitation.
- (b) The official representation by the Medical Officer of Health that any house is in his opinion unfit for habitation.
- (c) The making of Closing and Demolition Orders, when necessary, by the Local Authority.

On the 3rd September, 1910, the Local Government Board issued an Order making Regulations with respect to the manner in which inspection of the district under Section 17 of the Act of 1909 should be carried out, and with respect to the records to be kept of such inspection.

The following Regulations are prescribed by the Order :—

Article 1.—(1) The local authority shall as early as practicable after the date of this Order take into consideration the provisions of sub-section (1) of Section 17 of the Act of 1909, and shall determine the procedure to be adopted under these Regulations, to give effect to the requirements of that sub-section in regard to the inspection of their district from time to time.

(2) The local authority shall as part of their procedure make provision for a thorough inspection to be carried out from time to time according to the varying needs of circumstances of the dwelling-houses or localities in the district of the local authority.

(3) The local authority shall cause to be prepared from time to time by the Medical Officer of Health, or by an officer designated by them, but acting upon his direction and supervision, a list or lists of dwelling-houses the

early inspection of which is, in the opinion of the Medical Officer of Health, desirable. The list or lists may, if thought fit, relate to the dwelling-houses within a defined area of the district without specifying each house separately therein.

Article II.—The inspection under and for the purposes of sub-section (1) of Section 17 of the Act of 1909, shall be made by the Medical Officer of Health, or by an Officer designated by the local authority but acting under his direction and supervision, and the Officer making inspection of any dwelling-house shall examine the state of the dwelling-house in relation to the following matters, namely :—

- (1) The arrangements for preventing the contamination of the water supply.
- (2) Closet accommodation.
- (3) Drainage.
- (4) The condition of the dwelling-house in regard to light, the free circulation of air, dampness, and cleanliness.
- (5) The paving, drainage, and sanitary condition of any yard or out-houses belonging to or occupied with the dwelling-house.
- (6) The arrangements for the deposit of refuse and ashes.
- (7) The existence of any room which would in pursuance of sub-section (7) of Section 17 of the Act of 1909 be a dwelling-house so dangerous or injurious to health as to be unfit for human habitation.
- (8) Any defects in other matters which may tend to render the dwelling-house dangerous or injurious to the health of an inhabitant.

Article III.—Records of the inspection of dwelling-houses made under and for the purposes of sub-section (1) of Section 17 of the Act of 1909 shall be prepared under the direction and supervision of the Medical Officer of Health, and shall be kept by the Officer of the local authority making the inspection or by some other Officer appointed or employed for the purpose by the local authority.

The records may be kept in a book or books or on separate sheets or cards, and shall contain information, under appropriate headings, as to :—

- 1.—The situation of the dwelling-house, and its name or number.
- 2.—The name of the Officer who made the inspection.
- 3.—The date when the dwelling-house was inspected.
- 4.—The date of the last previous inspection and a reference to the record thereof.
- 5.—The state of the dwelling-house in regard to each of the matters referred to in Article II. of these Regulations.
- 6.—Any action taken by the Medical Officer of Health, or other Officer of the Local Authority, either independently or on the directions of the local authority.
- 7.—The result of any action so taken.
- 8.—Any further action which should be taken in respect of the dwelling-house.

Article IV.—The local authority shall, as far as may be necessary, take into consideration at each of their ordinary meetings the records kept in pursuance of Article III. of these Regulations, and shall give all such directions and take all such action within their powers as may be necessary or desirable in regard to any dwelling-house to which the records relate, and a note of any directions so given, and the result of any action taken shall be added to the records.

In accordance with the above Regulations, a list of dwelling houses, the early inspection of which is desirable, has been made, and the inspection has been duly carried out since the date when the Regulations came into force. This list was submitted to the Health and Port Sanitary Committee at their meeting on the 17th January, 1911, when, by a resolution of the Committee, the Chief Inspector of Nuisances, Mr. S. Evans, was the Officer designated under Article I. (3) of the Regulations.

In the memorandum of the Local Government Board relating to these Regulations it is stated that—

The Board are aware that many Local Authorities have already instituted a system of inspection under which inquiries are made by the Inspector of Nuisances or Sanitary Inspector in respect of the matters

referred to in Article II., the results being recorded in a form which contains information on other points besides those mentioned in the Article. The Board do not suggest that this form should be abandoned or altered, provided that it includes all the matters covered by Article II. The provisions of the Order are necessarily limited to matters to be recorded as the result of inspections under and for the purpose of Section 17 of the Act.

By Article 19 (3) of the Orders of 23rd March and 8th December, 1891, relating to Urban and Rural Districts and to London respectively, it is the duty of the Inspector of Nuisances or Sanitary Inspector, by inspection of the district both systematically at certain periods, and at intervals as occasion may require, to keep himself informed in respect of nuisances existing therein which require abatement. The Local Authority will no doubt usually designate the Inspector of Nuisances or Sanitary Inspector as the Officer who is to act under Article I. (3) of the Regulations.

It will be open to the Local Authority, if they think fit, to delegate the duty of considering the records to a Committee, subject to such directions as they consider necessary."

Subsequently a Special Committee—the Health (Housing) Committee—was appointed to deal with all matters under the Act and Regulations, and to consider the records of inspections made by the Inspecting Officers.

The question of the provision of water-closet accommodation came before this Committee on several occasions, and the following report was presented upon this subject :—

" Upon the 6th December, 1910, I presented a report to your Committee upon the powers possessed by Sanitary Authorities to require the provision of water-closet accommodation to occupied premises. For your information I beg to submit an extract from this report, taken from the printed minutes of that date :—

" The Sanitary Authority has power to require the provision of water-closet accommodation to premises under the following conditions :—

(1) Section 36 of the Public Health Act, 1875, provides that " if a house within the district of a local authority appears to such authority by the report of their surveyor or inspector of nuisances to be without a sufficient water-closet . . . the local authority shall by written notice require the owner or occupier of the house . . . to provide a sufficient water-closet. . . . Provided that where a water-closet is used in common by the inmates of two or more houses, or if in the opinion of the local authority a water-closet may be so used, they need not require the same to be provided for each house."

(2) The Public Health Acts Amendment Act, 1890, Section 22, provides that " where it appears to an urban authority on the report of their surveyor that any building used as a workshop or manufactory or where persons are employed or intended to be employed in any trade or business . . . is not provided with sufficient and suitable accommodation in the way of sanitary conveniences having regard to the number of persons employed . . . and also where persons of both sexes are employed . . . the urban authority may, if they think fit, by written notice, require the owner or occupier of any such building to provide such suitable and proper accommodation."

This " sufficient and suitable accommodation " is defined in the Sanitary Accommodation Order, made by the Secretary of State, under the Factory and Workshop Act, 1901, as follows :—

In factories or workshops where females are employed there shall be one sanitary convenience for every 25 females. The same accommodation is required for males, provided that where the number of males employed exceeds 100, one water-closet is required for every 25 males up to the first 100, and one for every 40 after. A further reduction is made when the number of males exceeds 500.

The Public Health Acts Amendment Act, 1907, Section 39 (3), provides that " if on the report of the Medical Officer of Health, or the Surveyor, or Inspector of Nuisances, the local authority are satisfied that sufficient closet accommodation has not been provided at or in connection with a building . . . the local authority . . . may by written notice to the owner of the building require the building to be provided with such number of proper and sufficient water-closets . . . as the circumstances of the case may render necessary."

From the above it will be seen that the Sanitary Authority are not required to insist upon the provision of separate water-closet accommodation for each house where there is sufficient and suitable accommodation which can be used in common by the inmates of two or more houses. As a matter of fact, there are a few small courts in the town in which the water closet accommodation is used in common by the inmates of the court. Moreover, there are some old houses, as for instance, Hill's Street and Hill's Terrace, in which the inmates of two or more houses use water closets in common, situated in one common back-yard. In some of these houses there is not sufficient space in the back-yard to provide separate water-closet

accommodation for each house, and it cannot be said that there is not sufficient accommodation in *connection* with each house. (Section 21 of the Public Health Acts Amendment Act, 1890, and Section 98 of the Cardiff Building Bye-laws provide for the control and supervision of sanitary conveniences used in common by the occupiers of two or more separate dwelling houses.)”

From this it will be seen that I advised that it would be impossible for your Committee to enforce a notice under Section 36 of the Public Health Act, 1875, or under Section 39 of the Public Health Acts Amendment Act, 1907, requiring additional water-closet accommodation where such accommodation is used in common by the inmates of more than one house, and where it is sufficient, having regard to the number of persons using the water-closets.

In the case of the above-mentioned houses, the number of persons using the one water-closet provided for the four houses is eight adults and five children under twelve years of age. Any additional water-closets placed in the small back-yard used in common by the inmates of the houses would seriously curtail the amount of space in the yard and increase the evils complained of. In these circumstances it is obviously impossible to state that there is insufficient closet accommodation. However, your Committee subsequently decided to require the owner of the houses to provide an additional water-closet, and instructed the Inspector of Nuisances to serve a notice to this effect. The notice was served upon the owner on the 19th January, 1911, and has not yet been complied with.

I would submit to your Committee that on sanitary grounds it is not generally advisable to increase the number of water-closets in small back-yards used in common by the inmates of more than one house. Such a proceeding has the effect of still further reducing the very limited amount of air space provided for such houses. When, on account of the closeness and bad arrangement of houses and sanitary conveniences connected with them, it is desirable to effect sanitary improvements, a more suitable remedy may be found in the provisions of Section 39 of the Housing of the Working Classes Act, 1890. This Section provides that—

“ Where it appears to the local authority that the closeness, narrowness, and bad arrangement or bad condition of any buildings, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defect in any buildings, is dangerous or prejudicial to the health of the inhabitants either of the said buildings or of the neighbouring buildings, and that the demolition or the reconstruction and re-arrangement of the said buildings or of some of them is necessary to remedy the said evils, and that the area comprising those buildings and the yards, out-houses and appurtenances thereof, and the site thereof, is too small to be dealt with as an unhealthy area under Part I. of this Act, the local authority shall pass a resolution to the above effect and direct a scheme to be prepared for the improvement of the said area.”

I am of opinion that the closeness and bad arrangement of the above-mentioned houses, and of the houses adjoining, namely, Nos. 6, 7, 8 and 9, Hill's Street and 73 and 74, Frederick Street (in which the conditions are very similar) are prejudicial to the health of the inhabitants, and that the most satisfactory way of dealing with the evils connected with these houses would be by an improvement scheme so arranged as to relieve the congestion of buildings in this neighbourhood.

In the event of your Committee being of the same opinion, I would recommend that you withdraw the notice served upon the owner, and direct the City Engineer to prepare a scheme for the improvement of the said area under Section 39 of the Act of 1890.”

TABLE VI.

Proceedings taken relating to houses considered to be unfit for human habitation under the Housing of the Working Classes Act, 1890, prior to the passing of the Housing, Town Planning &c., Act, 1909 :—

STREET.	Houses considered to be unfit for human habitation.	Representations by the Medical Officer of Health.	Closing Orders Obtained.	Houses Demolished Voluntarily.	Houses altered and used for purposes other than Dwelling Houses.	Houses rendered fit for human habitation.
Bryant's Court	2	2	2	...	...	...
Castle Court	5	5	5	5	...	...
Cowbridge Road	5	5	5	...	5	...
Delta Street	1	1	1	...	1	...
Dew's Court	4	4	4	4	...	...
Evans' Court (Tredegar Street) ...	3	3	3	2	...	...
Evans' Court (Millicent Street) ...	2	2	2	...	...	...
Evans' Court (The Hayes)	2	2	2	2	..	...
Gulliver's Court	2	2	2	...	...	...
Harris Court	6	6	...	...	...	6
Hodge's Row	12	12	12	...	...	...
Jenkins' Court	5	5	5	...	5	...
Jonathan's Court	2	2	2	2	...	...
Leekwith Road	5	5	5	...	5	...
Love Lane Court	5	5	4	1	...	4
Mason's Arms Court	8	8	8	8	...	...
Matthew's Court	6	6	6	3	...	...
Moulders' Arms Court	2	2	2	2	...	...
North Road	1	1	1	1	...	...
Pieton Cottages	3	3	3	...	3	...
Queen's Place	5	5	5	...	...	...
Spring Gardens Court	5	5	5	...	5	...
Stacey Court	4	4	4	...	3	...
Stanley Street	34	34	34	14	1	...
Williams' Court (Canal Street) ...	2	2	2	...	...	...
Totals	131	131	124	44	28	10

The following insanitary courts, etc. were either demolished or permanently closed as dwelling houses, after initial proceedings by the Local Authority, without official Closing Orders, prior to the passing of the Housing, Town Planning, etc. Act :—

Courts, etc., demolished :—

Giles' Court (4 houses)
 Kingston Court (10 houses)
 Landore Court.
 Gainor's Court.
 Union Buildings.
 Baker's Row (3 houses).
 Williams' Court (Baker's Row).
 Price's Court (2 houses).
 Ebenezer Street Court (2 houses).

Carpenters' Arms Court (7 houses).
 Mill Lane Court.
 Leekwith Road (12 houses).
 Kettle Court (1 house).
 Sandon Court.
 Dalton Court.
 Rising Sun Court.
 The Tunnel (Queen Street).
 Temperance Terrace.
 Stag Terrace (13 houses).

Courts, etc. permanently closed as dwelling houses :—

Green Garden Court (3 houses closed, 3 still occupied).
 Jones' Court (Womanby Street).
 Rowland's Buildings (4 houses).
 Wharton Place (4 houses).

MUNICIPAL HOSTEL FOR WOMEN AND GIRLS.—On February 13th, 1911, the City Council confirmed a recommendation of the Health and Port Sanitary Committee to the effect that the principle of a Municipal Lodging House for Women be adopted, subject to a suitable house being available, and, after an estimate of expenses for adapting a house for the purpose and for working expenses being submitted, that the Council be asked to authorise the necessary expenditure for the purpose.

Steps were then taken to discover a suitable house, and subsequently the Council decided, on the recommendation of the Health Committee, to rent No. 46, Charles Street, a house conveniently situated in the centre of the town, for the purpose.

The house is three storeys in height, with a basement containing three rooms. Two rooms in the basement are used as kitchens, in which the lodgers may cook food. One kitchen contains a water-tap, sink, and a gas stove; and the necessary cooking utensils are provided. One of the rooms in the basement is used for storage. On the ground floor, leading from the hall, three rooms are situated. The front room is used by the Matron as a private room, the middle room as a common sitting room, and the back room as an office. On the first floor there are two large rooms, which are used as bedrooms for lodgers, and a smaller room used as the Matron's bedroom. On this floor, at the back part of the house, are situated bathroom and lavatory accommodation, and a servant's bedroom. There are three rooms on the second floor, each being used as bedrooms for lodgers. Two rooms are situated in the attic which could, if necessary, be used as bedrooms.

At the present time accommodation is provided for twelve lodgers. There is, however, sufficient room for twenty-three beds, which will doubtless be provided if the necessity arises. A washing stand, &c., is provided for the use of each lodger.

The hostel was opened for use on 1st November, 1911, and the charge is 6d. per night, or 3/- per week. The hostel is used chiefly by domestic servants out of employment, who stay but a few nights. In two or three instances, young women have stayed for a few weeks, but the facilities afforded by the hostel are not utilised by women and girl workers receiving small wages in employment other than domestic service. Except on a few occasions the twelve beds have not been in use at one time. Generally speaking, the hostel appears to serve a useful purpose in providing cheap and safe lodgings for respectable women and girls temporarily out of employment.

The institution is managed by a Matron (Miss F. M. Morgan) who has the assistance of a servant regularly employed. The initial expenditure was as follows:—

	£	s.	d.
Furniture, Bedding, etc.	127	0	0
Renovations, Fittings & Repairs	58	0	0
Cutlery, Crockery and Kitchen Utensils	14	10	0
	£199	10	0

Estimated expenditure for the year ending 31st March, 1913:—

	£	s.	d.
Rent	110	0	0
Rates, Taxes and Insurance	32	10	0
Wages of Staff (Matron at £65 per annum, and two Assistants at 15/- per week each)	143	0	0
Coal, Wood and Stores	35	0	0
Lighting and Water	15	0	0
Renovations, Fittings and Repairs	10	0	0
Furniture, Bedding, &c.	37	10	0
Miscellaneous Expenses	5	0	0
	£388	0	0

Credit:—

Income from Letting Beds	91	0	0
	£297	0	0

WATER SUPPLY.—A full account of the Cardiff Waterworks has been given in previous annual reports. It will therefore be unnecessary to enter into full details on this occasion.

I am indebted to Mr. C. H. Priestley, M.Inst.C.E., the City Waterworks Engineer, for the following information.

The water supplied to the City, and to areas beyond the City boundaries, as provided by Act of Parliament, is a pure, soft water, derived from the gathering grounds on the old red sandstone formation, to the north of the South Wales coalfield, about 35 miles from Cardiff, in the Taff Fawr Valley, Breconshire. The water is conveyed by gravitation from the storage reservoirs at Taff Fawr to the reservoirs at Llanishen and Lisvane, balancing reservoirs being placed at suitable situations along the line of the main conduit, with filter beds of sand, etc., at Rhubina and the Heath. At the latter place Candy's Polarite Filters are also in operation. The capacity of the storage reservoirs is as follows :—

Beacons Storage Reservoir	...	...	...	345,000,000	gallons
Cantreiff	"	"	...	323,000,000	"
Llanishen	"	"	...	317,000,000	"
Lisvane	"	"	...	80,000,000	"

The high level service is supplied from Rhubina, at which place the works comprise filter beds and storage reservoirs, supplemented by a service reservoir and water tower at Penylan, supplied with water by gravitation from Rhubina.

The average annual rainfall at the Brecon Beacons for the past 27 years was 76·97 inches, the total during 1911 being 79·21 inches.

The Cardiff Corporation have obtained further powers to acquire land for an additional reservoir (No. 3 or "Llwynon") at Taff Fawr to meet the requirements of the increasing population. The construction of this reservoir was commenced in November, 1910.

The drainage area in connection with the new reservoir is 6,400 acres in extent, in addition to 4,000 acres already in use, and the total storage of water in the reservoirs will amount to 2,265,000,000 gallons, including 1,200,000,000 gallons, the capacity of the new reservoir, which will be sufficient for a population of considerably over 300,000 persons, allowing for a full and unrestricted use.

The water is of excellent quality, as will be seen from the following reports :—

CHEMICAL ANALYSIS OF SAMPLES OF CARDIFF WATER.

(All results are stated in parts per 100,000).

Date Collected.	Sample.	Reaction.	Hardness.	Chlorine.	Ammonia		Nitrates.	Oxygen Absorbed, 4 hours, 80° F.
					Free.	Albuminoid.		
1911. October 12th.	Heath Filtered ...	Alkaline	4·5°	·8	·0006	·0092	Practically Nil.	·142
„ 12th.	Rhubina Filtered ...	Alkaline	5·0°	·9	·0006	·0046	Traces	·093
„ 12th.	Llanishen Reservoir	Alkaline	3·9°	1·0	·0012	·0056	Practically Nil.	·097
„ 12th.	Lisvane Reservoir ...	Alkaline	3·9°	1·0	·0008	·0100	Practically Nil.	·0812
„ 13th.	Cantreiff Reservoir ...	Alkaline	4·5°	·9	·0018	·0134	Traces	·130
„ 13th.	Beacons Reservoir ...	Alkaline	4·17°	·9	·0010	·0068	Nil.	·195
September 9th.	Ely Well ...	Alkaline	23·2°	2·1	0·0010	·0022	·06	·012

BACTERIOLOGICAL EXAMINATION OF SAMPLES OF CARDIFF WATER.

Date Collected.	Sample.	Total Organisms per c.c. growing at		Relative Abundance of B. Coli.
		37° C.	20° C.	
1911 October 12th.	Heath Filtered ...	6	30	No B. Coli in 50 c.c.
„ 12th.	Rhubina Filtered ...	68	384	Atypical B. Coli in 50 c.c.
„ 12th.	Llanishen Reservoir	14	178	Atypical B. Coli in $\frac{1}{2}$ c.c. Typical B. Coli in 10 c.c.
„ 12th.	Lisvane Reservoir ...	8	108	Atypical B. Coli in 10 c.c.
„ 13th.	Cantreiff Reservoir ...	10	288	Atypical B. Coli in 50 c.c.
„ 13th.	Beacons Reservoir ...	48	292	Atypical B. Coli in 50 c.c.
September 29th	Ely Well ...	4	48	No B. Coli in 50 c.c.

FOOD INSPECTION.—The inspection of meat at the Public Abattoirs has been carried out satisfactorily during the year, under the arrangements set forth in the Annual Report for 1909. Mr. P. J. Mullane, M.R.C.V.S. is the Chief Meat Inspector, with two Inspectors under his direction, each holding the Certificate for Inspectors of Meat and other Foods of the Royal Sanitary Institute. Since all the slaughtering of animals is carried on at the two municipal slaughter-houses, there is no difficulty in securing an efficient inspection of meat before it is sold for human consumption. During the year 1911, all diseased and unsound meat was voluntarily surrendered by the owners.

The Inspectors have directions to pay regard to the recommendation of the Select Committee of the House of Commons on the Tuberculosis (Animals) Compensation Bill, 1904, to the effect that, “If a butcher who is in possession of tuberculous meat has notified the fact to the proper authority as soon as he could be reasonably expected to be aware of it, the case should not be taken into Court.” The principles laid down by the Royal Commission on Tuberculosis in their report of 1898, with respect to the degree of tubercular disease which should cause a carcass or part thereof to be seized, are observed, although generally no difficulty is experienced in obtaining the owner’s consent to the destruction of meat found to be unfit for food, either by reason of tuberculosis or other conditions.

Mr. G. M. McGregor, Certified Inspector of Meat and Other Foods, who was formerly a butcher, acts in the capacity of Inspector of Meat and Other Foods in shops, markets and wholesale stores within the City, under the direction of the Inspector of Nuisances, Mr. S. Evans.

In connection with meat inspection, the facilities provided at the Public Health Laboratory are fully utilised for the purpose of diagnosis.

In the following tabular statements particulars are given with reference to diseased or unsound food dealt with during the past year and previous years.

TABLE VII.

Animals slaughtered at the Municipal Slaughter-houses during the year 1911 :—

					Roath Abattoir.	Canton Abattoir.	Totals.
Cattle	...	...	...	...	7,182	614	7,796
Sheep	...	...	...	...	43,081	4,571	47,652
Calves	...	...	...	...	5,136	224	5,360
Pigs	...	...	...	...	17,851	3,239	21,090
Totals	...	...	...	...	73,250	8,648	81,898

TABLE VIII.

Unsound carcasses of meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

PLACE.	Carcases of				Totals.
	Beef.	Mutton and Lamb.	Pork.	Veal.	
Roath Abattoir	37	61	38	5	141
Canton Abattoir	1	...	7	...	8
Totals	38	61	45	5	149

TABLE IX.

Causes of destruction of carcasses :—

Cause.	Beef.	Mutton and Lamb.	Veal.	Pork.	Totals.
Anæmia	...	1	...	...	1
Asphyxiation	...	7	1	1	9
Decomposition	...	1	...	4	5
Dropsy	...	5	...	2	7
Dropsy and Hypertrophy	...	1	...	...	1
Emaciation	1	2	...	...	3
Emaciation and Dropsy...	1	28	...	...	29
Found Dead	...	13	1	1	15
Jaundice	...	...	...	1	1
Peritonitis	...	...	...	1	1
Pneumo Enteritis	...	...	1	...	1
Prematurity	...	...	2	...	2
Pyæmia	1	...	...	...	1
Rheumatism	...	2	...	...	2
Traumatism	...	1	...	...	1
Tuberculosis	35	...	...	35	70
Totals	38	61	5	45	149

Tuberculosis was found in 418 carcasses altogether, but in 70 cases only the whole carcasses were destroyed.

TABLE X.

Approximate weight of diseased or unsound meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

					Whole Carcases	Part Carcases.	Offals.	Totals.
					tons. cwt. lbs.	tons. cwt. lbs.	tons. cwt. lbs.	tons. cwt. lbs.
Beef	...	...	...	...	10 0 35	2 4 61	8 18 56	21 3 40
Veal	...	...	...	...	0 3 79	0 0 75	0 3 55	0 7 97
Mutton and Lamb	...	...	...	...	0 17 106	0 1 87	1 2 28	2 1 109
Pork	...	...	...	...	1 12 105	0 13 32	1 5 107	3 12 20
Totals	...	...	...	...	12 14 101	3 0 31	11 10 22	27 5 42

TABLE XI.

Approximate weight of diseased or unsound meat and other food surrendered at shops and stores, and destroyed or otherwise dealt with by arrangement with the owners, during the year 1911 :—

					tons.	cwt.	lbs.
Beef	...	...	...	...	17	5	54
Veal	...	...	...	...	—	1	108
Mutton and Lamb	...	...	...	...	2	12	65
Pork	...	...	...	...	—	14	10
Poultry	...	...	...	...	—	13	103
Rabbits	...	...	...	...	—	3	67
Game	...	...	...	...	—	2	103
Fish	...	...	...	...	21	8	22
Provisions	...	...	...	...	6	18	83
Vegetables	...	...	...	...	6	3	50
Fruit	...	...	...	...	7	3	9
Nuts	...	...	...	...	0	4	36
Total	...	...	...	...	63	12	38

In addition to the foregoing, 720 unsound eggs were surrendered and destroyed.

TABLE XII.

Approximate weight of diseased or unsound food destroyed or otherwise dealt with, either by consent of the owners, or by Magistrates' Orders, in each year since 1896 :—

Year.	Food.			Year.	Food.		
	tons.	cwt.	lbs.		tons.	cwt.	lbs.
1896	...	1	14 88	1904	...	18	11 54
1897	...	4	16 72	1905	...	18	7 108
1898	...	4	8 73	1906	...	21	16 77
1899	...	6	6 93	1907	...	24	3 84
1900	...	9	9 49	1908	...	65	4 54
1901	...	15	0 96	1909	...	73	6 12
1902	...	19	9 107	1910	...	76	12 8
1903	...	18	12 46	1911	...	90	17 80

TABLE XIII.

Number of animals slaughtered, and the number and proportion per cent. condemned at the Municipal Slaughter-houses during each of the years 1901 to 1911 :—

				Year.	Number of Animals Slaughtered	Number of Animals Condemned	Percentage Condemned
Roath	1901	69,385	61	0·08
Canton	...	...	...	„	10,578	5
Total	...	...	...	...	79,963	66
Roath	1902	73,528	66	0·09
Canton	...	...	...	„	11,518	9
Total	...	...	...	...	85,046	75
Roath	1903	69,146	72	0·09
Canton	...	...	...	„	12,112	5
Total	...	...	...	...	81,258	77
Roath	1904	74,550	80	0·10
Canton	...	...	...	„	11,154	8
Total	...	...	...	...	85,704	88
Roath	1905	70,076	74	0·10
Canton	...	...	...	„	10,482	10
Total	...	...	...	...	80,558	84
Roath	1906	67,155	94	0·14
Canton	...	...	...	„	10,428	14
Total	...	...	...	...	77,583	108
Roath	1907	68,845	81	0·11
Canton	...	...	...	„	10,888	9
Total	...	...	...	...	79,733	90
Roath	1908	71,212	103	0·13
Canton	...	...	...	„	10,284	7
Total	...	...	...	...	81,496	110
Roath	1909	77,572	102	0·13
Canton	...	...	...	„	9,866	15
Total	...	...	...	...	87,438	117
Roath	1910	72,628	116	0·15
Canton	...	...	...	„	8,911	8
Total	...	...	...	...	81,539	124
Roath	1911	73,250	141	0·18
Canton	...	...	...	„	8,648	8
Total	...	...	...	...	81,898	149

SALE OF FOOD AND DRUGS ACTS.—Samples submitted for analysis during the year 1911 to the Public Analyst, Mr. Thomas Hughes, F.I.C. :—

TABLE XIV.

Description of Samples.					Number Analysed.	Genuine.	Adulterated.
Baking Powder	...	...	...	...	6	6	...
Brandy	...	...	...	...	3	...	3
Bread	...	...	...	...	6	6	...
Butter	...	...	...	...	74	65	9
Butter (informal)	...	...	...	...	48	45	3
Cheese	...	...	...	...	6	6	...
Coffee	...	...	...	...	12	12	...
Cornflour	...	...	...	...	3	3	...
Flour ...	...	...	...	...	1	1	...
Flour (informal)	...	...	...	...	5	5	...
Flour (self-raising)	...	...	...	...	5	5	...
Flour—self-raising (informal)	...	...	...	...	1	1	...
Lard ...	...	...	...	...	18	18	...
Margarine	...	...	...	...	24	24	...
Milk ...	...	...	...	...	570	520	50
Milk (skimmed)	...	...	...	...	5	5	...
Milk (informal)...	...	...	...	...	1	...	1
Pepper	...	...	...	...	3	3	...
Tea ...	...	...	...	...	6	6	...
Whiskey	...	...	...	...	3	2	1
Totals	...	...	...	...	800	733	67

TABLE XV.

Legal proceedings under Sale of Food and Drugs Acts:—

No. of Sample.	Description.			Percentage of Adulteration.	Fine.	Remarks.
45	Milk	...	...	14.7% added water	£70	And costs (6/6).
48	"	...	...	6% deficient fat	—	Dismissed—warranty.
170	"	...	...	47.7% deficient fat	—	To pay costs (7/-).
174	"	...	...	26.5% added water and 23% deficient fat	£3	And costs (5/6).
191	"	...	...	5% deficient fat	—	Dismissed—warranty.
193	"	...	...	12% deficient fat	—	To pay costs (7/-).
195	"	...	...	22.3% deficient fat	—	To pay costs (5/6).
238	"	...	...	17.3% deficient fat	—	To pay costs (10/-).
255	"	...	...	22% deficient fat	£1	And costs (7/-).
256	"	...	...	7% deficient fat	10/-	And costs (7/6).
269	"	...	...	5% deficient fat	—	To pay costs (4/6).
279	"	...	...	9% deficient fat	—	To pay costs (5/-).
332	"	...	...	20.7% deficient fat	£10	And costs (7/-).
337	"	...	...	19.3% deficient fat	£5	And costs (17/6).
367	"	...	...	3.2% added water and 6.3% deficient fat.	—	To pay costs (£1 6s.).
385	"	...	...	7.7% deficient fat	—	Dismissed.
397	"	...	...	8.7% deficient fat	£1	And costs (5/6).
398	"	...	...	3.7% deficient fat	£1	And costs (6/-).
400	"	...	...	9.3% deficient fat	£1	And costs (6/-).
499	"	...	...	7% added water	£2	And costs (7/-).
503	Butter	...	...	7.41% excess of water	—	Dismissed—warranty.
532	Milk	...	...	3.6% added water	—	To pay costs (5/6).]
536	"	...	...	5.3% added water	5/-	Including costs.
561	Butter	...	...	2.23% excess of water	—	Dismissed—warranty.
564	"	...	...	2.8% excess of water	—	Dismissed—warranty.
590	Milk	...	...	0.015% boric acid	—	Withdrawn.
647	"	...	...	5.5% added water	£2	Including costs.
649	"	...	...	7.7% deficient fat	£1	And costs (10/-).
660	"	...	...	7% deficient fat	—	Dismissed.
719	Butter	...	...	95% margarine	—	To pay costs (5/6).
760	Milk	...	...	5.9% added water	—	To pay costs (4/6).
792	"	...	...	12.5% added water	—	Dismissed on payment of costs (5/-).
795	"	...	...	11.9% added water	—	Dismissed on payment of costs (6/-).
797	"	...	...	5.3% added water	—	Dismissed on payment of costs (4/6).

TABLE XVI.

In the following cases legal proceedings were not taken :—

No. of Sample.	Description.	Percentage of Adulteration.	Remarks.
87	Milk	1% added water	—
168	„	1.9% added water	—
192	„	1.2% added water	—
248	„	3% added water	Informal sample.
268	„	1% added water	—
283	„	8.3% added water and 13% deficient fat	Disclosure made to Inspector.
284	„	1% deficient fat	—
294	„	3% deficient fat	—
301	„	2% deficient fat	—
313	„	2% deficient fat	—
322	„	2% deficient fat	—
329	„	2% added water	—
355	„	2% deficient fat	—
368	„	2.5% added water	—
391	„	3% deficient fat	—
406	„	20% deficient fat	Disclosure made to Inspector.
410	Butter	1% excess of water	Proceedings not recommended.
437	Milk	2.9% added water	—
505	Butter	0.52% excess of water	—
529	Milk	1.3% added water	—
534	„	1.3% added water	—
550	„	2% added water	—
579	Butter	0.8% excess of water	—
580	„	0.45% excess of water	—
610	„	0.41% excess of water	—
666	Milk	1% added water	—
687	Butter	95% margarine	Informal sample.
699	„	100% margarine	Informal sample.
704	„	0.15% excess of water	Informal sample.
767	Whiskey	42.9 under proof	Not sold as being of standard strength.
769	Brandy	32% under proof	Not sold as being of standard strength.
770	„	30% under proof	Not sold as being of standard strength.
771	„	27.4% under proof	Proceedings not recommended.

Legal proceedings are not taken in cases of samples of milk in which the percentage of adulteration is small, and generally when the amount of added water is less than 5%.

TABLE XVII.

Other legal proceedings under the Sale of Food and Drugs Acts :—

Offence.	Fine.	Remarks.
Refusing to serve Inspector with sample of milk ...	£2	And costs (7/-).
False warranty <i>re</i> sample of milk (No. 191) ...	—	Dismissed.
False warranty <i>re</i> sample of butter (No. 503) ...	—	Dismissed—further warranty.
False warranty <i>re</i> sample of butter (No. 503) ...	—	Dismissed—still further warranty.

TABLE XVIII.

Samples of milk analysed and proportion adulterated :—

	Samples Analysed.	SAMPLES ADULTERATED.					
		Number	Per centage	Added Water.	Defic- ient Fat.	Added Water and Deficient Fat.	Preserva- tives.
WHOLESALE—							
Taken at Railway Stations	145	6	4.1	1	4	1	—
RETAIL—							
Taken in shops, from carts, &c. ...	431	45	10.4	20	22	2	1
Totals	576	51	8.8	21	26	3	1

FACTORY AND WORKSHOP ACT, 1901.—Under Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required in his Annual Report to deal specifically with the administration of the Act (so far, as the matters under the charge of the Sanitary Authority are concerned), and to send a copy of this report to the Secretary of State.

“Factories” include all places in which mechanical power is used in aid of the manufacturing processes, and certain other industries specified in Part I. of Schedule VI. to the Act, whether mechanical power is used or not. The duty devolving upon the Health Department in connection with factories is confined to the enforcement of Section 22 of the Public Health Acts Amendment Act, 1890, relating to the provision of suitable and sufficient sanitary conveniences. The inspections of factories referred to in the Tables were in connection with this duty. The Workshop Inspectors made 1,325 inspections of factories during the year, and 168 notices were served.

“Workshops” include premises (not being factories) in which manual labour is exercised by way of trade or for purposes of gain in, or incidental to, the making, altering, repairing, finishing or adapting for sale any article, and to or over which the employer of the persons working there has the right of access or control. The inspections of such premises during the year amounted to 4,465. The number of notices served in cases where sanitary defects were found was 601.

“Workplaces,” although not defined in the Act, include any place where work is done permanently and where people assemble together to do work permanently of some kind or another, such as stables, kitchens of restaurants, &c. The number of inspections of such places made during the year amounted to 616, and 66 notices were served.

Underground bakehouses are dealt with by special provisions of the Factory and Workshop Act, 1901. It is provided in Section 101 of the Act, that no underground bakehouse shall be used as such unless it was so used at the time of the passing of the Act, and that after the 1st January, 1904, no underground bakehouse (whenever established) may be used unless the Sanitary Authority is satisfied that it is suitable for the purpose in all respects, and has granted a certificate of suitability. A bakehouse is deemed to be an underground bakehouse if any room used for baking or for any purpose incidental thereto is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room. There are four underground bakehouses in Cardiff for which certificates have been granted.

One hundred and five lists of outworkers were received, giving the names and addresses of 367 work-people engaged in home work, and 558 inspections were made of outworkers' premises.

In 56 instances sanitary defects were discovered, and notices were served in these cases. Great importance is attached to the inspection of places in which these outworkers are engaged, the object being to prevent unwholesome conditions or nuisances injurious to the health of the workers. Sections 107-115 of the Act of 1901 give power to the Local Authority to prohibit work being done by outworkers (1) in dwellings which are injurious or dangerous to the health of the workers themselves, *e.g.* through overcrowding, want of ventilation, or other insanitary conditions, (2) in premises where there is dangerous infectious disease. Nuisances found upon these premises were abated in the ordinary way under the provisions of the Public Health Acts and Sanitary Byelaws.

The Inspectors of Workshops made altogether 6,964 visits of inspection to factories, workshops, &c.; 891 notices regarding nuisances or sanitary defects were served, and 813 notices were complied with. Details of the work carried out under the Act are set forth in Tables XIX to XXI. in this report.

The following information is set forth on the form supplied by the Secretary of State.

TABLE XIX.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

PREMISES.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries)	1,325	168	—
Workshops (including Workshop Laundries)	4,465	601	1
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	216	66	—
Total	6,006	835	1

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS.	Number of Defects	
	Found.	Remedied.
Nuisances under the Public Health Acts :—		
Want of cleanliness	142	132
Want of ventilation	15	14
Overcrowding	1	1
Want of drainage of floors	3	4
Other nuisances	679	623
Sanitary accommodation { insufficient	46	30
{ unsuitable or defective	99	92
{ not separate for sexes	6	8
Breach of special sanitary requirements for bakehouses (Sec. 97 to 100)	64	61
Total	1,055	965

3.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.							OUTWORK IN UNWHOLESOME PREMISES, Section 108.	OUTWORK IN INFECTED PREMISES, Sections 109, 110.		
	Lists received from Employers						Notices served on Occupiers as to keeping or sending lists.				
	Sending twice in the year.			Sending once in the year.							
	Lists.	Outworkers		Lists.	Outworkers.						
		Con-tractors	Work-men.		Con-tractors	Work-men.					
Wearing Apparel—											
(1) making, &c. ...	94	...	256	11	...	111	132	56	56	...	...
(2) cleaning and washing ...	...	...	...	...	...	...	...	...	...	...	...

4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the Year.								Number.
Bakers ...	...	...	...	...	...	...	...	198
Bootmakers ...	...	...	...	...	...	...	...	182
Dressmakers and Milliners ...	...	...	...	...	...	...	...	258
Laundries ...	...	...	...	...	...	...	...	47
Tailors ...	...	...	...	...	...	...	...	107
Miscellaneous ...	...	...	...	...	...	...	...	820
Total number of Workshops on Register ...								1,612

5.—OTHER MATTERS.

CLASS.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (Sec. 133) ...	44
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts but not under the Factory Act :—	
Notified by H.M. Inspector ...	38
Reports (of action taken) sent to H.M. Inspector ...	38
Other (Notices of Occupation of Workshops received from H.M. Inspector) ...	128
Underground Bakehouses in use at the end of the year ...	4

TABLE XX.

Factories and workshops on the Registers at the end of the year 1911, the number of inspections made, and the number of notices served during the year :—

	Number on Registers.	Number of Inspections.	Number of Notices Served.
WORKSHOPS :—			
Bakers	198	1,418	258
Bootmakers	128	353	42
Dressmakers and Milliners	199	342	45
Laundries	44	278	23
Tailors	90	243	43
Miscellaneous	552	1,662	171
DOMESTIC WORKSHOPS :—			
Bootmakers	54	42	14
Dressmakers and Milliners	59	67	1
Laundries	3	6	1
Tailors	17	13	1
Miscellaneous	47	41	2
WORKPLACES :—			
Miscellaneous	221	616	66
OUTWORKERS' PREMISES :—			
Tailors	223	530	55
Miscellaneous	7	28	1
FACTORIES :—			
Bakers	19	88	12
Bootmakers	12	27	4
Laundries	18	55	8
Miscellaneous	374	1,155	144
Totals	2,265	6,964	891

TABLE XXI.

NUISANCES IN FACTORIES, WORKSHOPS, &c. during the year 1911.

NUISANCES.	Bakehouses.		Bootmakers' Premises.		Dressmakers' and Milliners' Premises.		Laundries.		Tailors' Premises.		Outworkers' Premises.		Miscellaneous.		Totals.	
	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied
Want of cleanliness	62	60	6	6	9	9	16	13	19	17	16	17	92	87	220	209
Want of ventilation...	3	2	1	—	2	2	1	1	5	4	9	10	3	5	24	24
Overcrowding	—	—	—	—	1	1	—	—	—	—	2	2	—	—	3	3
Want of drainage of floors	—	—	—	—	—	—	—	1	—	—	—	—	3	3	3	4
Sanitary { Insufficient	8	4	3	2	2	1	2	2	—	—	1	—	31	21	47	30
Accom- { Unsuitable or defective	2	1	7	9	10	6	2	2	3	5	7	6	77	70	108	99
modation { Not separate for sexes	—	—	2	1	1	1	—	2	—	—	—	—	3	4	6	8
Defective or choked drains	15	13	8	7	7	5	2	—	7	7	9	9	49	43	97	84
Defective syphon traps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Defective gully traps	2	2	—	—	1	1	—	—	1	1	—	—	67	56	71	60
Want of flushing apparatus	8	5	3	3	2	1	1	—	2	2	5	6	15	11	36	28
Defective flushing apparatus	—	—	4	4	2	2	4	5	2	1	2	2	25	24	39	38
Defective yard surfaces	5	2	5	4	2	2	—	—	2	3	3	1	12	12	29	24
Offensive accumulations	3	4	4	5	1	1	4	5	1	1	4	4	38	38	55	58
Want of manure receptacles	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	2
Defective manure receptacles	3	3	—	—	—	—	—	—	—	—	—	—	—	4	—	7
Other nuisances	183	170	35	23	14	13	10	9	13	15	16	14	112	114	383	358
Totals	294	267	78	64	54	45	42	40	55	56	74	71	532	493	1,129	1,036

SHOP HOURS ACT, 1904.—The object of this Act is to enable Local Authorities to make Closing Orders, fixing the hours for closing shops on the several days of the week. The Act requires that the occupiers of shops desirous of promoting early closing should apply to the Local Authority, who may then take further steps in accordance with the provisions of the Act. Closing Orders made under the Act may apply to the entire district of the Local Authority, or to any specified part, and to all shops of any specified class.

TABLE XXII.

Closing Orders under the Shop Hours Act, 1904, in operation in Cardiff, and number of inspections and infringements thereunder during 1911 :—

No. of Order.	Trade.	Area.	Inspections	Infringements
1	Barbers	Whole City	395	12
2	Bootmakers	Grangetown	77	13
3	Bootsellers	Central Area	135	6
4	„	Roath, Cathays, and Park ...	226	23
5	„	Riverside and Canton ...	52	1
6	Goldsmiths, &c.	Central Area	133	—
7	Pawnbrokers	„ „	41	—
8	Goldsmiths, Pawnbrokers, &c. ...	Whole of City except Central ...	195	4
9	General and Fancy Drapers, Milliners, &c.	East of Taff Vale and Rhymney Railways... ..	276	18
10	Toys or Fancy Goods	Central Area	138	9
		Totals	1,668	86

TABLE XXIII.

Legal proceedings taken during the year 1911, under the Shop Hours Act, 1904 :—

Ref. No.	Offence.	No. of Closing Order.	Result.
3	Serving customers during prohibited hours ...	9	Fined 5/- and costs.
5	Not exhibiting notices <i>re</i> Closing Order ...	1	Cautioned.
6	Aiding and abetting in previous case (No. 5) ...	1	Cautioned.
13	Serving customers during prohibited hours ...	3	Cautioned.
14	Aiding and abetting in previous case (No. 13) ...	3	Cautioned.
15	Serving customers during prohibited hours ...	3	Cautioned.
16	Aiding and abetting in previous case (No. 15) ...	3	Cautioned.
17	Serving customers during prohibited hours ...	6	Cautioned.
19	Do. do. ...	8	Fined 5/- and costs.
26	Do. do. ...	9	Dismissed.
30	Do. do. ...	1	Cautioned.
33-35	Do. do. (3 cases) ...	2	Each cautioned.
36	Do. do. ...	9	Fined 5/- and costs.
37	Do. do. ...	2	Fined 5/- and costs.
38	Do. do. ...	2	Fined 5/- and costs.
39-48	Do. do. (10 cases) ...	2	Each cautioned.
57	Do. do. ...	10	Cautioned.
69	Do. do. ...	10	Cautioned.
77	Do. do. ...	9	Cautioned.

In cases of infringements where legal proceedings were not taken, the persons concerned were cautioned by the Inspectors.

SHOP HOURS ACTS, 1892-1899.—The object of the Shop Hours Act, 1892, is to prevent the employment of young persons for an excessive number of hours in shops, and a notice giving the provisions of the Act must be exhibited by employers in a conspicuous place in shops where young persons are employed. Under the Seats for Shop Assistants Act, 1899, seats for female assistants must be provided in shops. The requirements of these Acts are, as a rule, readily complied with by the persons concerned. If an infringement is discovered and pointed out to the shopkeeper, on the shop being revisited by an Inspector, the required notice is posted in the shop, or seats are provided, as the case may be.

TABLE XXIV.

Inspections of Shops under the Shop Hours Acts, 1892-1899 :—

SHOPS INSPECTED.	Number of Inspections.	Act of 1892.		Act of 1899.		
		Employing Young Persons.	Infringements.	Employing Females.	Shops with Seats provided.	Infringements.
Bootsellers	39	34	8	11	11	...
Butchers	88	53	6	2	2	...
Chemists	22	14	1	3	3	...
China Dealers	11	8	2	2	2	...
Confectioners	44	21	4	32	31	1
Dairies	6	3	2	2	2	...
Drapers and Outfitters	94	64	16	42	39	3
Dyers and Cleaners	2	2	...	2	2	...
Fancy Dealers	44	28	5	31	31	...
Fishmongers and Fruiterers	71	35	11	16	15	1
Furniture Dealers	12	4	2	2	2	...
General Dealers	1	...	...	...	...	...
Grocers	130	101	10	10	10	...
Hairdressers & Tobacconists	22	11	1	14	13	1
Ironmongers & Cycle Dealers	22	13	4	2	2	...
Jewellers	8	3	1	2	1	1
Newsagents & Stationers	17	9	2	4	4	...
Pawnbrokers	12	6	...	...	...	...
Publicans	18	2	1	6	6	...
Seedsmen and Florists	17	5	2	2	2	...
Miscellaneous	30	16	7	11	9	2
Totals	710	432	85	196	187	9

SANITARY INSPECTION OF DISTRICT.—The general sanitary inspection of the district, inspection of factories and workshops, inspection of shops under the Shops Hours Acts, inspection of seamen's and common lodging houses, the inspection of meat and other food in shops and stores, and the taking of samples for analysis under the Sale of Food and Drugs Acts, is carried out by Mr. S. Evans, Chief Inspector of Nuisances, with the assistance of twelve Assistant Inspectors.

For the purposes of inspection, the city is divided into six districts, as follows :—

- District No. 1.—Canton and Riverside Wards.
 „ No. 2.—Splott Ward and part of Adamsdown Ward.
 „ No. 3.—Park Ward and part of Cathays Ward.
 „ No. 4.—Central Ward and parts of Cathays and South Wards.
 „ No. 5.—Grangetown Ward and part of South Ward.
 „ No. 6.—Roath Ward and part of Adamsdown Ward.

The following statement, in addition to other tables in this Report, shows the nature and extent of the work performed by the Chief Inspector and his Assistants.

SUMMARY OF SANITARY INSPECTION OF DWELLING HOUSES, &c. DURING
THE YEAR 1911 :—

Complaints of nuisances received	...	...	...	...	...	823
Houses, etc. inspected	...	...	...	...	...	4,376
House to house inspections (including testing of drains)	...	...	...	...	...	1,426
Re-inspections of houses, etc.	...	...	...	...	...	23,512
Drains tested with smoke	...	...	...	...	...	781
" " chemicals	...	...	...	...	...	1,196
" " water	...	...	...	...	...	7
Notices served :—						
Intimation	...	...	...	...	...	3,936
Statutory	...	...	...	...	...	85
Notices complied :—						
Intimation	...	...	...	...	...	3,798
Statutory	...	...	...	...	...	68

In connection with the sanitary inspection of dwelling houses, 8,036 sanitary defects were remedied, details of which are given below :—

Drains unchoked and repaired	...	...	...	...	...	1,080
New W.C. pans provided	...	...	...	...	...	122
New syphon traps provided	...	...	...	...	...	24
New gully traps provided	...	...	...	...	...	52
W.C.'s repaired	...	...	...	...	...	217
W.C.'s cleansed	...	...	...	...	...	252
W.C. accommodation provided	...	...	...	...	...	2
Flushing apparatus provided	...	...	...	...	...	6
" " repaired	...	...	...	...	...	65
Trough outlets repaired	...	...	...	...	...	126
Roofs repaired	...	...	...	...	...	940
Shutes repaired	...	...	...	...	...	865
Down-pipes repaired	...	...	...	...	...	92
Inside plastering repaired	...	...	...	...	...	344
Outside plastering repaired	...	...	...	...	...	270
Yard surfaces repaired	...	...	...	...	...	708
Yards, &c. cleansed	...	...	...	...	...	91
Outhouses repaired	...	...	...	...	...	59
Accumulations removed	...	...	...	...	...	356
Manure receptacles provided	...	...	...	...	...	5
" " repaired	...	...	...	...	...	17
Boundary walls repaired	...	...	...	...	...	103
Floors repaired	...	...	...	...	...	535
Houses, bedding, &c., cleansed	...	...	...	...	...	303
Ventilation improved	...	...	...	...	...	89
Water supply provided	...	...	...	...	...	29
Overcrowding abated	...	...	...	...	...	35
Other nuisances abated.	...	...	...	...	...	1,249

Particulars as to the inspection of premises systematically inspected during the year 1911, are herewith given :—

OFFENSIVE TRADES :—

Number on Register	...	...	...	...	...	49
Inspections	...	...	...	...	...	375
Notices served	...	...	...	...	...	4
Notices complied	...	...	...	...	...	6

DAIRIES, COWSHEDS AND MILKSHOPS :—

Milkshops on Register	...	...	...	...	...	383
Cowsheds on Register	...	...	...	...	...	15
Inspections of milkshops	...	...	...	...	...	2,151
" " cowsheds	...	...	...	...	...	106
Notices served ...	...	...	...	...	...	101
Notices complied	...	...	...	...	...	102

SHOPS, STORES, &C. :—

Inspections of butchers' shops	...	...	...	...	...	1,760
" " provision shops	...	...	...	...	...	306
" " markets	...	...	...	...	...	673
" " wholesale stores	...	...	...	...	...	2,675
" " fish and fruit shops	...	...	...	...	...	593
" " storage premises	...	...	...	...	...	1,113

MISCELLANEOUS INSPECTIONS :—

Public houses	...	...	...	...	...	464
Notices served ...	...	...	...	...	...	52
Notices complied	...	...	...	...	...	52
Theatres, etc.	...	...	...	...	...	76
Notices served ...	...	...	...	...	...	2
Notices complied	...	...	...	...	...	2
Fried fish shops	...	...	...	...	...	522
Notices served ...	...	...	...	...	...	29
Notices complied	...	...	...	...	...	29
Ice-cream shops	...	...	...	...	...	596
Notices served ...	...	...	...	...	...	16
Notices complied	...	...	...	...	...	19
Inspections of urinals	...	...	...	...	...	365
Smoke observations	...	...	...	...	...	6

COMMON LODGING HOUSES :—

Common Lodging Houses on Register	...	...	...	...	...	38
Day inspections	...	...	...	...	...	2,386
Night inspections...	...	...	...	...	...	79
Notices served ...	...	...	...	...	...	176
Notices complied	...	...	...	...	...	172

SEAMEN'S LODGING HOUSES :—

Seamen's Lodging Houses on Register	...	...	...	...	...	152
Licences granted	...	...	...	...	...	181
Licences relinquished	...	...	...	...	...	29
Day inspections	...	...	...	...	...	5,989
Night inspections...	...	...	...	...	...	273
Notices served under Byelaws	...	...	...	...	...	379
Notices under Byelaws complied	...	...	...	...	...	364
Notices served under Public Health Acts	...	...	...	...	...	125
Notices under Public Health Acts complied	...	...	...	...	...	121
Persons cautioned for lodging seamen without being licensed	...	...	...	...	...	67
Legal proceedings for lodging seamen without being licensed	...	...	...	...	...	2

One person was fined 10s. (including costs), and one case, after being adjourned, was subsequently dismissed.

MORTUARY :—

Bodies removed to Mortuary (58 males and 6 females)	...	...	...	...	64
Post-mortem examinations	...	...	...	...	25

SUMMARY OF LEGAL PROCEEDINGS.

Legal Proceedings.	Number of Cases.	Fines.
		£ s. d.
Under Sale of Food and Drugs Acts	38	99 10 0
„ Byelaws as to Seamen's Lodging Houses.	2	0 10 0
„ Public Health Act, 1875	4	—
„ Shop Hours Act, 1904	30	1 5 0
„ Factory and Workshop Act, 1901	1	0 5 0
Totals	75	£101 10 0

VITAL STATISTICS.—The statistics in this report are based upon the Registrar General's estimate of the population of Cardiff for the middle (June) of the year 1911, *i.e.* 182,729. This estimate does not, of course, correspond exactly with the enumerated population taken at the Census of April 1st, 1911, but includes the estimated increase during one quarter of the year.

The population of Cardiff, enumerated at the Census, amounted to 182,280, being an increase of 17,947 over the census enumeration of 1901 (164,333). The increase in the population of the whole City was at the rate of 10·9 per cent., as compared with 27·4 per cent., the rate in the previous inter-censal period.

The following table shows the rates of increase or decrease of population in Cardiff, in each municipal ward, and in parts of the rural district surrounding Cardiff during the periods, 1891-1901 and 1901-1911.

TABLE XXV.

Decennial increase or decrease of population :—

	1891-1901.		1901-1911.	
	Increase (+) or Decrease (–) of Population.	Increase (+) or Decrease (–) per cent.	Increase (+) or Decrease (–) of Population.	Increase (+) or Decrease (–) per cent.
Cardiff (Whole District)	+ 35,418	+ 27·4	+ 17,947	+ 10·9
Central Ward	— 1,062	— 8·5	+ 47	+ 0·4
South Ward	— 399	— 3·7	— 201	— 1·9
Cathays Ward	+ 3,999	+ 27·5	+ 3,545	+ 19·1
Adamsdown Ward	— 2,046	— 12·6	— 201	— 1·4
Riverside Ward	+ 2,224	+ 14·9	+ 2,825	+ 16·4
Canton Ward	+ 6,561	+ 49·8	+ 2,347	+ 11·8
Grangetown Ward	+ 8,850	+ 75·4	+ 2,555	+ 12·4
Roath Ward	+ 2,405	+ 19·7	+ 3,377	+ 23·1
Park Ward	+ 6,835	+ 47·8	+ 2,161	+ 10·2
Splott Ward	+ 8,051	+ 91·4	+ 1,492	+ 8·8
Llanishen	+ 521	+ 75·3	+ 522	+ 43·0
Lisvane	+ 8	+ 3·2	+ 73	+ 28·5
Whitechurch	+ 1,543	+ 46·4	+ 4,218	+ 86·7
Llandaff	+ 1,398	+ 31·9	+ 3,368	+ 58·3

It will be of interest to note the increase of the populations in the rural districts surrounding Cardiff as shown in the foregoing table, as this increase has been due, to some extent, to the exodus of inhabitants from Cardiff. The excess of births over deaths in Cardiff amounted to 24,974 during the ten years 1901-1911, being 7,027 more than the actual increase of the population during this period. It would thus appear that there has been a very considerable migration of population from the City to these outlying districts. It will be noticed that in two of the Wards (South and Adamsdown), there has been an actual decline in the population. In these districts are situated some of the older and more crowded houses and areas, in which an increase could neither be expected nor desired. The population in the Central Ward has remained practically stationary during the ten years. It is evident, therefore, that there has been a constant flow from these parts of the town to the outskirts of the City and to the suburban districts. Each one of these districts shows a very substantial increase in population, varying from 28.5 per cent. in Lisvane to 86.7 in Whitechurch. Llanishen and Llandaff having increased by 43.0 and 58.3 per cent. respectively. So far as the City Wards are concerned, it will be seen that the rate of increase during this decade was most evident in the Roath, Cathays and Riverside Wards. Grangetown, Canton, and Park Wards showed a rate of increase of 12.4, 11.8, and 10.2 per cent. respectively. The increase in all these cases occurred chiefly in the outlying parts of the Wards in question.

The following table gives the population according to the census returns since 1801. The increase shown between 1871 and 1881 was in part due to the extension of the boundaries of the Borough, by the inclusion of the districts of Roath and Canton, in the year 1875.

TABLE XXVI.

Year.						Census Population.
1801	...	...	...	...	...	1,870
1811	...	...	...	...	...	2,457
1821	...	...	...	...	...	3,521
1831	...	...	...	...	...	6,187
1841	...	...	...	...	...	10,077
1851	...	...	...	...	...	18,351
1861	...	...	...	...	...	32,954
1871	...	...	...	...	...	39,536
1881	...	...	...	...	...	82,761
1891	...	...	...	...	...	128,915
1901	...	...	...	...	...	164,333
1911	...	...	...	...	...	182,280

TABLE XXVII.

The following table gives the population, estimated by the Registrar General's method, in each year since the census of 1901, before and after revision upon the basis of the census of 1911 :—

Year.					Estimated Population before revision.	Estimated Population after revision.	
1902	...	...	...	...	168,909	...	166,527
1903	...	...	...	...	172,598	...	168,303
1904	...	...	...	...	176,313	...	170,098
1905	...	...	...	...	180,054	...	171,913
1906	...	...	...	...	183,823	...	173,747
1907	...	...	...	...	187,620	...	175,600
1908	...	...	...	...	191,446	...	177,473
1909	...	...	...	...	195,303	...	179,359
1910	...	...	...	...	199,189	...	181,284
1911	...	...	...	...	203,107	...	182,729

TABLE XXVIII.

The following table gives the population of Cardiff at various ages, estimated to the middle of 1911, in accordance with the method adopted by the Registrar General :—

Ages.					Persons.	Males.	Females.
All ages	...	...	...	...	182,729	89,958	92,771
Under 5 years	...	...	...	...	23,025	11,251	11,774
5-10 years	...	...	...	...	21,055	10,445	10,610
10-15	„	...	...	...	18,917	9,352	9,565
15-20	„	...	...	...	18,046	8,650	9,396
20-25	„	...	...	...	18,094	8,425	9,669
25-30	„	...	...	...	16,723	8,168	8,555
30-35	„	...	...	...	14,576	7,306	7,270
35-40	„	...	...	...	12,991	6,585	6,406
40-45	„	...	...	...	10,608	5,551	5,057
45-50	„	...	...	...	8,188	4,263	3,925
50-55	„	...	...	...	6,615	3,363	3,252
55-60	„	...	...	...	4,821	2,422	2,399
60-65	„	...	...	...	3,676	1,783	1,893
65-70	„	...	...	...	2,476	1,113	1,363
70-75	„	...	...	...	1,592	725	867
75-80	„	...	...	...	841	362	479
80 years and upwards	...	...	...	...	485	194	291

The age distribution in the foregoing table is calculated on the basis of the Census enumeration, 1901, the ages at the recent Census not yet being available.

In view of the reductions in the estimated populations, as shown by the census returns, it is necessary to revise the birth and death rates by raising them in accordance with the reduced populations. The extent of this variation is shown in the following table, which gives the revised birth-rates and death-rates respectively in each year, as compared with these rates based upon the Registrar General's unrevised estimates of the populations :—

TABLE XXIX.

Year.				Calculated on Registrar General's Estimate.		Calculated on Revised Estimates.	
				Birth-rate.	Death-rate.	Birth-rate.	Death-rate.
1901	...	...	...	31.4	15.7	31.5	16.1
1902	...	...	...	31.2	16.9	32.0	17.2
1903	...	...	...	30.4	14.4	31.2	14.8
1904	...	...	...	29.5	15.2	30.6	15.8
1905	...	...	...	28.5	13.5	29.8	14.2
1906	...	...	...	27.2	14.2	28.7	15.0
1907	...	...	...	25.9	15.0	27.7	16.0
1908	...	...	...	27.0	13.2	29.1	14.3
1909	...	...	...	25.7	13.0	28.0	14.2
1910	...	...	...	24.2	11.8	26.5	13.0
1911	...	...	...	23.2	12.7	25.8	14.1

The following is a summary of the vital statistics for the year 1911, based upon the revised estimate of the population in accordance with the Census enumeration :—

Estimated Population (1911)				...	...	182,729		
Births	...	...	...	4,730	Birth-rate per 1,000	...	...	25.8
Deaths	...	...	...	2,594	Death-rate per 1,000	...	...	14.1
Deaths from Zymotic Diseases				364	Zymotic Death-rate per 1,000	...	...	1.99
Deaths under one year of age				639	Deaths under one year per 1,000 births			
					registered	...	...	135

Deaths and death-rates per 1,000 from Zymotic, Respiratory, and Tuberculous Diseases during the year 1911, and the average death-rates from these diseases during the years 1901–1910 :—

TABLE XXX.

CAUSE OF DEATH.					Number of Deaths (1911)	Death-rate per 1,000 (1911)	Average Death-rate (1901-1910)
Small-Pox	...	...	...	...	1	0.00	0.00
Measles	...	...	...	...	7	0.03	0.34
Scarlet Fever	...	...	...	...	16	0.08	0.10
Diphtheria	...	...	...	...	37	0.20	0.20
Enteric Fever	...	...	...	...	7	0.03	0.05
Whooping Cough	...	...	...	...	53	0.29	0.31
Diarrhœa	...	...	...	...	243	1.32	0.50
Respiratory Diseases	...	...	...	...	372	2.03	2.63
Phthisis	...	...	...	...	235	1.28	1.24
Other Tuberculous Diseases	...	...	...	...	81	0.44	0.50

TABLE XXXI.

Table showing the birth-rate and death-rate per 1,000 persons living, and rate of infant mortality in Cardiff, compared with the rates in England and Wales during the year 1911, and with the rates in Cardiff during previous years :—

					Birth-rate.	Death-rate.	Deaths under 1 year per 1,000 births.
England and Wales	...	...	...	...	24.4	14.6	130
77 Great Towns	...	...	...	...	25.6	15.5	140
136 Smaller Towns	...	...	...	...	23.4	13.8	133
England and Wales, less the 213 towns	...	...	...	...	23.4	13.9	118
Cardiff—1911	...	...	...	...	25.8	14.1	135
Cardiff—10 years 1901—1910 (average)	...	...	...	...	29.4	15.0	128

MARRIAGES.—The return of the number of marriages in the City of Cardiff during the years 1902–1911, with the rate of persons married per 1,000 of the population, is given below.

TABLE XXXII

YEAR.	NUMBER OF MARRIAGES.	RATE OF PERSONS MARRIED PER 1,000 LIVING.
1902	1,677	19·8
1903	1,668	19·3
1904	1,563	17·7
1905	1,650	18·8
1906	1,769	19·2
1907	1,743	18·5
1908	1,759	18·3
1909	1,803	18·4
1910	1,728	17·3
1911	1,646	18·0

BIRTHS.—During the year 1911 the births registered in the city numbered 4,730 ; of these, 2,394 were males and 2,336 were females. The number of births corresponded to an annual birth-rate of 25·8 per 1,000 persons living. During the ten years ended 1891, the birth-rate in Cardiff averaged 39·9 per 1,000, as compared with 29·4, the average rate during the years 1901–1910.

The following table gives the annual number of births and the birth-rates in Cardiff in periods since 1852, from which it will be seen that a considerable decline in this rate has taken place during recent years.

TABLE XXXIII.

Period	Number of Births.				Birth-rate per 1,000		
1852–1861	1,144	Means	...	...	44·2
1862–1871	1,364		...	...	37·7
1872–1881	2,433		...	...	36·5
1882–1891	4,166		...	...	39·9
1892–1901	5,241		...	...	35·3
1902	5,278	...	...	...	32·0
1903	5,250	...	...	...	31·2
1904	5,208	...	...	...	30·6
1905	5,140	...	...	...	29·8
1906	5,001	...	...	...	28·7
1907	4,865	...	...	...	27·7
1908	5,172	...	...	...	29·1
1909	5,026	...	...	...	28·0
1910	4,822	...	...	...	26·5
1911	4,730	...	...	...	25·8

TABLE XXXIV.

Showing the number of legitimate and illegitimate births, male and female, in each municipal ward during the year 1911 :—

Municipal Wards.	Legitimate		Illegitimate.		Totals.		TOTALS
	Males	Females	Males	Females.	Males.	Females.	
Central ...	117	121	9	8	126	129	255
South ...	125	123	7	3	132	126	258
Cathays ...	283	292	11	12	294	304	598
Adamsdown ...	189	183	7	5	196	188	384
Riverside ...	181	154	19	17	200	171	371
Canton ...	307	296	11	11	318	307	625
Grangetown ...	367	384	9	8	376	392	768
Roath ...	218	202	9	6	227	208	435
Park ...	209	248	13	8	222	256	478
Splott ...	294	245	9	10	303	255	558
Totals ...	2,290	2,248	104	88	2,394	2,336	4,730

DEATHS.—The total number of deaths registered at all ages and from all causes in the City of Cardiff during the year 1911, amounted to 2,671, including non-residents who died within the district. If this number is corrected by the subtraction of non-residents who died in public institutions in Cardiff, and by the addition of residents who died in institutions beyond the district, the number is reduced to 2,594, giving an annual death-rate of 14·1 per 1,000 persons living. The average death-rate in Cardiff during the ten years 1901–1910 was 15·0 per 1,000.

A gratifying feature in this report is the marked and almost continuous decline in the death-rate during the past sixty years, as shown in Table XXXVI. From this it will be seen that the rate of mortality in Cardiff has been reduced from 29·2 per 1,000, the average rate in the ten years 1852–1861, to 13·0 per 1,000 in 1910, and 14·1 per 1,000 in 1911. Had the annual death-rate remained since 1901 at the rate at which it stood in the ten years 1892–1901 (18·0 per 1,000), the deaths would have numbered 31,442 instead of 25,973, the actual number of deaths registered during the decennial period 1902–1911. This represents a saving of 5,469 lives during that period, and a corresponding decrease in sickness and distress.

TABLE XXXV.

Death-rate, zymotic death-rate, and rate of infant mortality in Cardiff, compared with the average rates in 77 great towns, for each quarter during the year 1911 :—

		Death-rate per 1,000.	Zymotic Death-rate per 1,000.	Deaths under 1 year per 1,000 Births.
1st Quarter, 1911—	Cardiff ...	14·2	0·78	97
	77 Great Towns ...	15·8	1·82	115
2nd Quarter, 1911—	Cardiff ...	11·5	0·72	81
	77 Great Towns ...	13·8	1·29	96
3rd Quarter, 1911—	Cardiff ...	16·0	5·23	251
	77 Great Towns ...	16·6	4·91	225
4th Quarter, 1911—	Cardiff ...	12·4	1·16	103
	77 Great Towns ...	14·7	1·12	125

TABLE XXXVI.

The following Table gives the vital statistics in periods since 1852, and shows the marked decline in the general death-rate, in the death-rate from zymotic diseases, and in the birth-rate in successive periods:—

Years	Population	Births	Birth-rate per 1,000	Deaths	Death-rate per 1,000	Deaths from Zymotic Diseases	Zymotic Death-rate per 1,000
1852—1861	... 25,889	1,144	44.2	756	29.2	222	8.58
1862—1871	... 36,152	1,364	37.7	875	24.2	167	4.62
1872—1881	... 66,639	2,433	36.5	1,335	20.0	218	3.27
1882—1891	... 104,420	4,166	39.9	2,255	21.6	347	3.32
1892—1901	... 148,606	5,241	35.3	2,674	18.0	355	2.39
1902 ...	... 166,527	5,278	32.0	2,865	17.2	459	2.75
1903 ...	... 168,303	5,250	31.2	2,496	14.8	232	1.37
1904 ...	... 170,098	5,208	30.6	2,695	15.8	320	1.88
1905 ...	... 171,913	5,140	29.8	2,443	14.2	216	1.25
1906 ...	... 173,747	5,001	28.7	2,618	15.0	248	1.42
1907 ...	... 175,600	4,865	27.7	2,819	16.0	358	2.03
1908 ...	... 177,473	5,172	29.1	2,538	14.3	219	1.23
1909 ...	... 179,359	5,026	28.0	2,549	14.2	170	0.94
1910 ...	... 181,284	4,822	26.5	2,356	13.0	187	1.03
1911 ...	... 182,729	4,730	25.8	2,594	14.1	364	1.99

TABLE XXXVII.

Showing the number of deaths and death-rates at various age periods during the last six years:—

AGES.	Number of Deaths.						Death-rate per 1,000 persons living at each Age Group.					
	1906	1907	1908	1909	1910	1911	1906	1907	1908	1909	1910	1911
Under 5 years ...	904	1,026	838	720	741	837	39.0	43.4	34.7	29.2	29.5	36.3
5 to 15 „ ...	110	98	111	92	102	104	2.7	2.3	2.6	2.1	2.3	2.6
15 „ 25 „ ...	135	147	127	135	128	105	3.7	3.9	3.3	3.4	3.2	2.9
25 „ 65 „ ...	1,006	1,008	962	1,014	883	947	12.8	12.5	11.7	12.1	10.3	12.1
65 years and upwards ...	463	540	500	588	502	601	85.3	97.5	88.5	102.1	85.4	111.4
At all ages ...	2,618	2,819	2,538	2,549	2,356	2,594	15.0	16.0	14.3	14.2	13.0	14.1

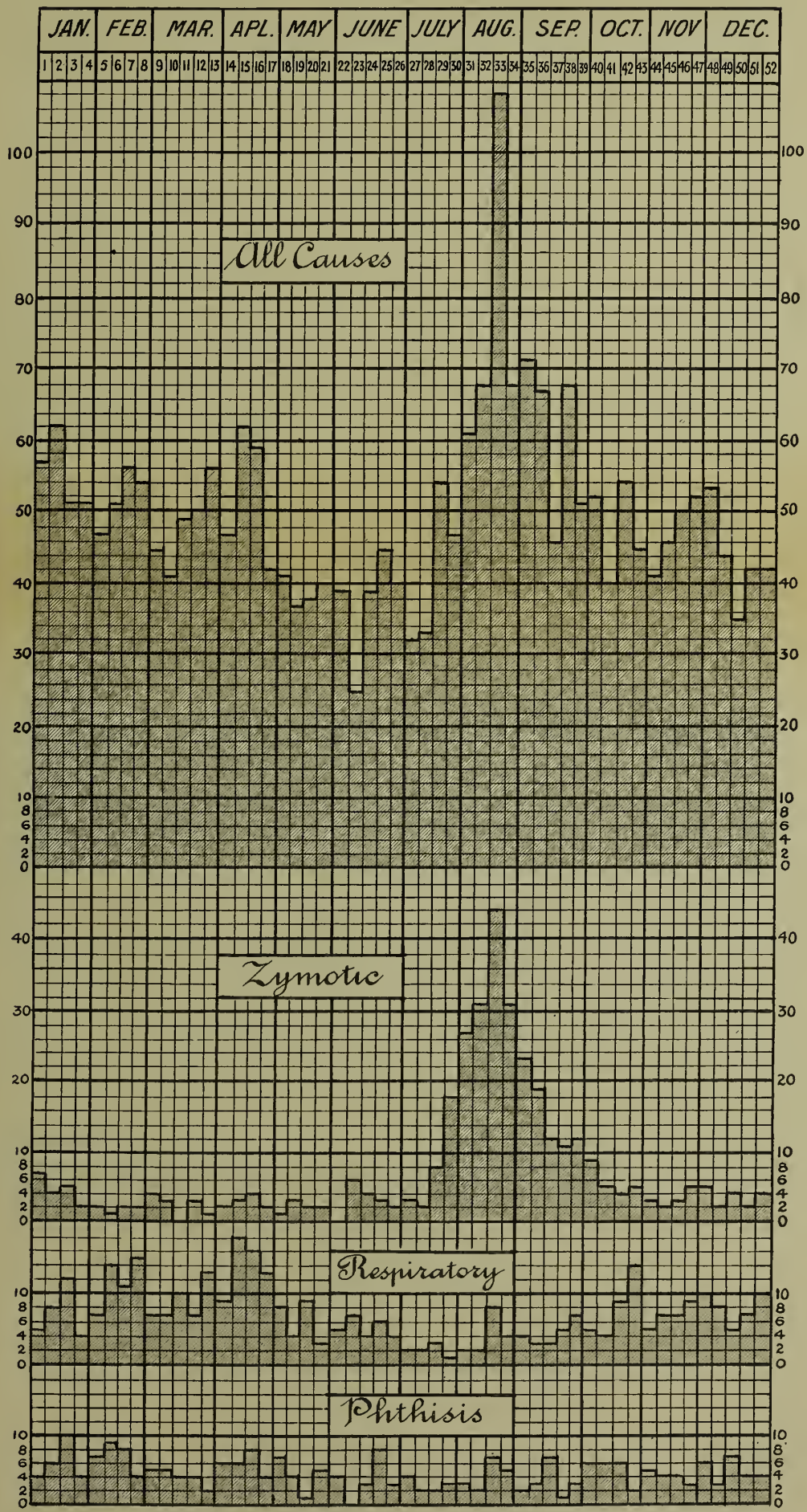
TABLE XXXVIII.

Death-rates from all causes per 1,000 persons living in the several municipal wards, the highest rate in each year being underlined :—

		1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Cardiff (Whole District)	...	17.2	14.8	15.8	14.2	15.0	16.0	14.3	14.2	13.0	14.1
Roath Ward	...	14.0	12.4	13.3	11.4	12.3	11.9	10.7	11.3	11.9	13.0
Park Ward	...	10.0	8.7	9.3	8.8	8.9	9.9	8.9	8.9	9.3	12.4
Splott „	...	15.7	11.2	15.0	12.5	13.9	13.7	13.2	10.7	12.9	12.9
Central „	...	17.4	15.0	14.2	14.0	14.4	15.2	12.8	13.0	<u>20.4</u>	<u>22.1</u>
South „	...	15.6	15.3	15.2	13.0	16.4	17.1	15.4	14.3	<u>18.3</u>	<u>21.4</u>
Cathays „	...	13.5	9.8	11.1	10.1	11.2	11.1	10.0	9.3	10.5	12.3
Adamsdown Ward	...	20.1	16.1	15.5	17.6	17.2	20.3	15.7	17.2	14.9	16.3
Riverside „	...	<u>11.9</u>	<u>14.3</u>	<u>11.3</u>	<u>9.4</u>	<u>9.2</u>	<u>10.1</u>	<u>10.7</u>	<u>10.8</u>	13.6	12.6
Canton „	...	12.1	10.7	12.0	9.8	9.9	10.4	10.3	10.0	10.7	12.7
Grangetown „	...	15.7	13.6	15.2	14.3	14.4	17.0	14.0	14.0	14.0	14.2

Chart A

SHOWING THE NUMBER OF DEATHS FROM ALL CAUSES, ZYMOTIC DISEASES, RESPIRATORY DISEASES AND PHTHISIS IN CARDIFF, DURING EACH WEEK OF THE YEAR 1911.



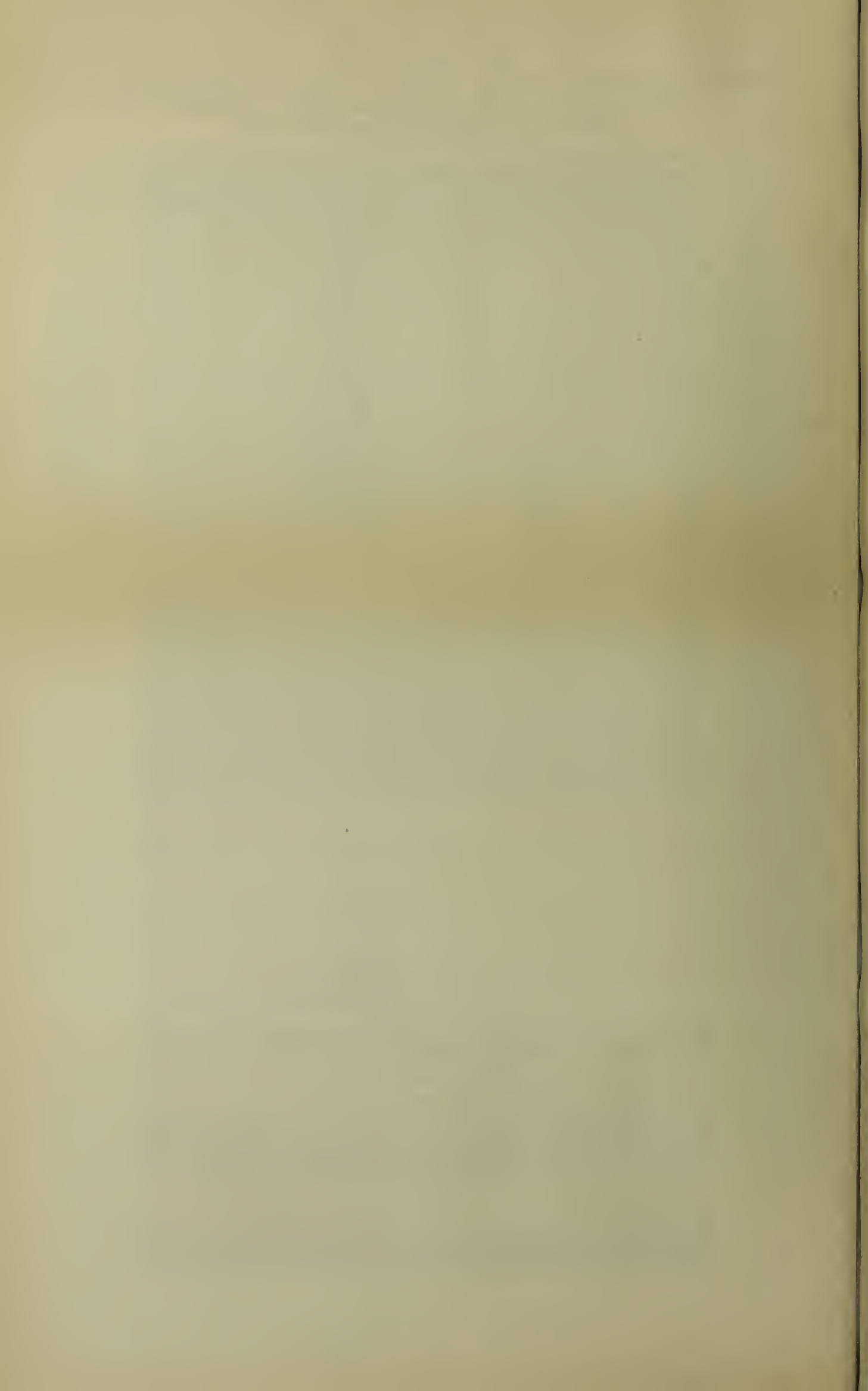


TABLE XXXIX.—Analysis of Births and Deaths in the City of Cardiff, in Registration Sub-Districts, and in Municipal Wards, during the year 1911.

LOCALITIES	*Population	Area in Acres (Land and Inland Water)		Persons per Acre		Births		Deaths		Deaths under 1 Year		Seven Principal Zymotic Diseases		Principal Zymotic Diseases.										Phtthisis, Pulmonary Tuberculosis		Other Tuberculous Diseases.		Respiratory Diseases			
		Number	Birth-rate	Number	Death-rate	Number	Number per 1,000 Births	Number	Death-rate	Measles		Scarlet Fever		Whooping Cough		Diphtheria		Typhoid Fever		Diarrhoea		Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate		
										Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate									Deaths	Death-rate
City of Cardiff ...	182,729	6,373	28	4,730	25.8	2,594	14.1	639	135	364	1.99	1	0.00	7	0.03	16	0.08	53	0.29	37	0.20	7	0.03	243	1.32	235	1.28	81	0.44	372	0.23
East Cardiff District Sub-division (Roath Ward Park Ward Splott Ward)	17,982	...	...	435	24.1	234	13.0	59	135	36	2.00	...	...	...	...	2	0.11	9	0.50	4	0.22	...	...	21	1.16	20	1.11	7	0.38	33	1.83
	23,285	...	...	478	20.5	289	12.4	56	117	44	1.88	...	...	...	...	6	0.25	7	0.30	3	0.12	...	...	28	1.20	29	1.24	8	0.34	44	1.88
	18,348	...	...	558	30.3	238	12.9	85	152	45	2.44	...	...	...	...	...	...	5	0.27	6	0.32	1	0.05	33	1.79	22	1.19	6	0.32	31	1.68
East Cardiff ...	59,615	481	123	1,471	24.6	761	12.7	200	135	125	2.09	...	...	...	...	8	0.13	21	0.35	13	0.21	1	0.01	82	1.37	71	1.19	21	0.35	108	1.81
Central Cardiff District Sub-division (Central Ward South Ward Cathays Ward Adamsdown Ward)	11,333	...	...	255	22.5	251	22.1	41	160	24	2.11	...	...	1	0.08	2	0.17	2	0.17	2	0.17	1	0.08	16	1.41	39	3.44	7	0.61	45	3.97
	10,119	...	...	258	25.4	217	21.4	55	213	26	2.56	...	...	...	...	...	...	1	0.09	1	0.09	1	0.09	23	2.27	29	2.86	5	0.49	19	1.87
	22,067	...	...	598	27.0	273	12.3	72	120	35	1.13	...	...	...	...	...	...	5	0.22	6	0.27	...	...	24	1.08	19	0.86	8	0.36	40	1.81
	13,987	...	...	384	27.4	228	16.3	45	117	28	2.00	1	0.07	2	0.14	1	0.07	3	0.21	6	0.42	1	0.07	14	1.00	17	1.21	11	0.78	33	2.35
Central Cardiff ...	57,506	3,832	15	1,495	25.9	969	16.8	213	142	113	1.96	1	0.01	3	0.05	3	0.05	11	0.19	15	0.26	3	0.05	77	1.33	104	1.80	31	0.53	137	2.38
West Cardiff District Sub-division (Riverside Ward Canton Ward Grangetown Ward)	19,946	...	...	371	18.5	253	12.6	49	132	32	1.60	...	...	2	0.10	2	0.10	5	0.25	2	0.10	1	0.05	20	1.00	16	0.80	8	0.40	38	1.90
	22,074	...	...	625	28.2	282	12.7	75	120	42	1.90	...	...	1	0.04	3	0.13	9	0.40	2	0.09	1	0.04	26	1.17	23	1.04	6	0.27	43	1.94
	23,139	...	...	768	33.1	329	14.2	102	132	52	2.24	...	...	1	0.04	...	...	7	0.30	5	0.21	1	0.04	38	1.64	21	0.90	15	0.64	46	1.98
West Cardiff ...	65,159	2,060	31	1,764	27.0	864	13.2	226	128	126	1.93	...	...	4	0.06	5	0.07	21	0.32	9	0.13	3	0.04	84	1.28	60	0.92	29	0.44	127	1.94

*The population of the whole City is that estimated by the Registrar General, and the population of the Registration Sub-districts and of the Municipal Wards is that enumerated at the Census, 1911 (provisional).

INFANT MORTALITY.—The rate of infant mortality in Cardiff in the year 1911, calculated in the proportion of deaths under one year of age to 1,000 births registered, was at the rate of 135, compared with 111 in the year 1910, and with 128, the average rate for the ten years 1901–1910.

Rates of infant mortality throughout the country, as compared with that of Cardiff during 1911 :—

	Deaths under 1 year per 1,000 births.				
England and Wales	130
77 Great Towns	140
136 Smaller Towns	133
England and Wales less 213 towns	118
CARDIFF	135

TABLE XL.

Rates of infant mortality in Cardiff compared with the rates in the large towns and in England and Wales during past years :—

Period.	Deaths under 1 Year per 1,000 Births.		
	Cardiff.	Large Towns.	England and Wales.
1881—1890	165	162	141
1891—1900	161	172	153
1901	148	168	151
1902	145	145	133
1903	122	144	132
1904	144	160	146
1905	118	160	146
1906	134	145	133
1907	131	127	118
1908	124	128	121
1909	103	118	109
1910	111	115	106
1911	135	140	130

From the foregoing table it will be seen that comparing the rates of infant mortality in the two periods 1881–90, and 1891–1900, an actual increase is shown in the later decennium, both in England and Wales as a whole and in the large towns. In Cardiff a slight decrease in the mortality is shown in the later period. Since the year 1900 there has been generally a steady, but not a very considerable decline in this mortality throughout the country. The rate of infant mortality in Cardiff in 1911 was unusually high for this district, although below the average in the large towns.

TABLE XLI.

The following table shows the rates of infant mortality in the several municipal wards, the highest rate in each year being underlined :—

			Deaths under one year per 1,000 births.									
			1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Cardiff (Whole District)	...		145	122	144	118	134	131	124	103	111	135
Roath Ward	...	...	146	133	123	104	114	121	115	105	127	135
Park	„	...	129	93	120	70	98	95	97	77	72	117
Splott	„	...	153	129	163	144	146	135	130	84	109	152
Central	„	...	155	114	164	129	<u>211</u>	<u>180</u>	135	96	<u>179</u>	160
South	„	...	<u>166</u>	<u>190</u>	<u>173</u>	135	<u>159</u>	<u>176</u>	<u>140</u>	154	<u>148</u>	<u>213</u>
Cathays	„	...	<u>120</u>	<u>104</u>	<u>110</u>	95	99	107	<u>99</u>	78	105	<u>120</u>
Adamsdown Ward	...	...	153	146	142	<u>149</u>	153	134	114	<u>160</u>	125	117
Riverside	„	...	112	109	135	<u>112</u>	110	109	128	<u>89</u>	112	132
Canton	„	...	143	101	134	105	118	102	127	101	94	120
Grangetown	„	...	161	122	170	134	151	159	133	110	114	132

TABLE XLII.

The chief causes of death amongst infants under one year of age in Cardiff during the years 1905–1911, are shown in the following table :—

	Deaths under one year of age.						
Cause of Death.	1905	1906	1907	1908	1909	1910	1911
Premature Birth ...	74	87	95	113	89	96	97
Diarrhœa and Enteritis	76	147	80	141	77	77	201
Pneumonia ...	56	44	83	46	42	46	39
Bronchitis ...	43	59	54	30	33	46	26
Whooping Cough ...	18	41	30	25	30	11	32
Tuberculosis ...	38	42	22	29	22	24	25
Atrophy and Debility	75	83	86	80	61	63	57
Convulsions ...	64	47	47	52	55	44	41
Measles ...	19	...	35	2	7	16	1
Congenital Defects ...	20	18	11	18	26	22	20

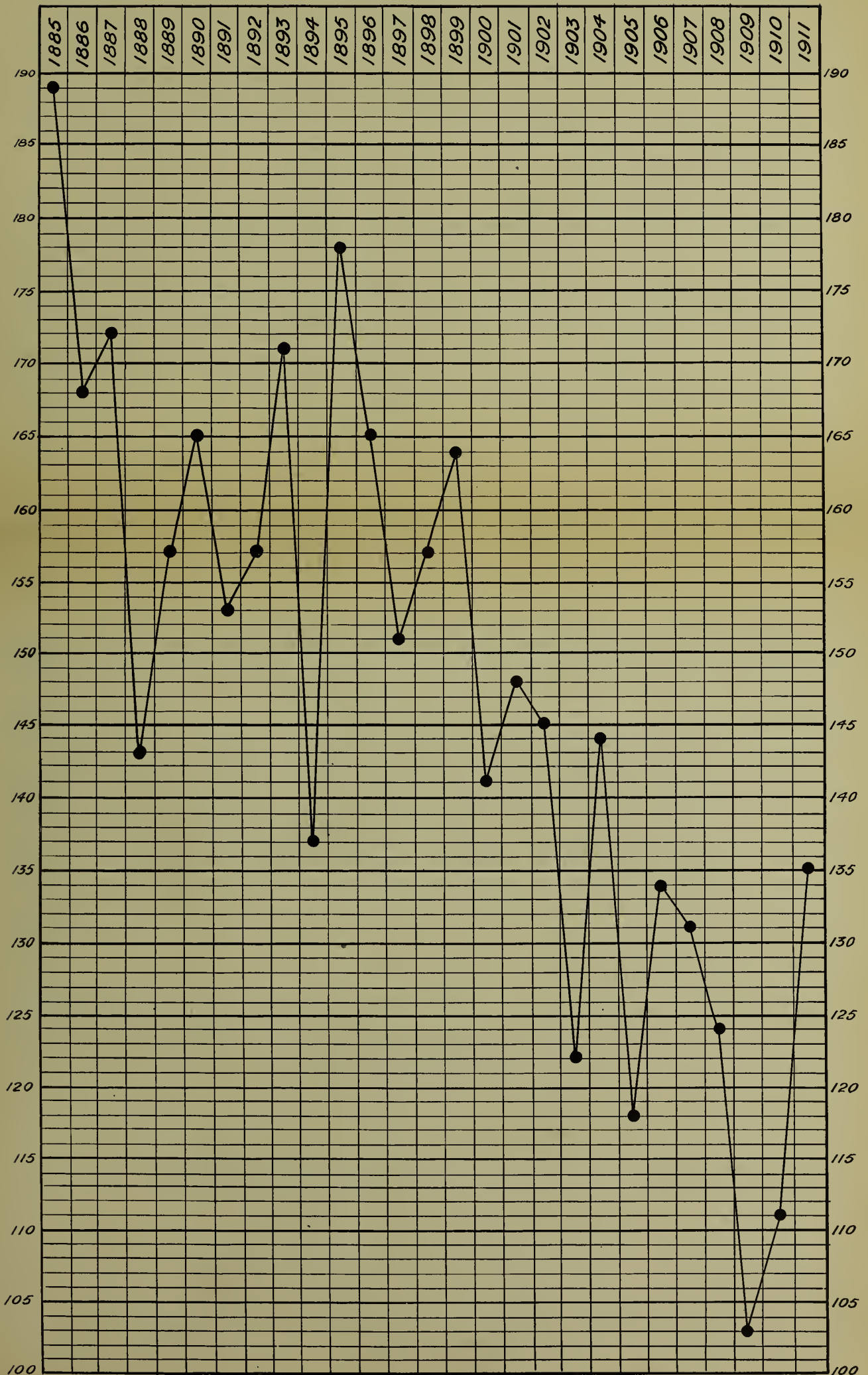
TABLE XLIII.

Infant mortality rates in 33 large towns :—

Towns.	Deaths under 1 year per 1,000 births registered.					
	1890--94	1895--99	1900--04	1905--09	1910	1911
London	158	160	136	120	103	126
West Ham	159	180	152	137	101	140
Croydon	137	142	118	99	87	105
Brighton	151	165	117	105	109	98
Portsmouth	156	168	134	116	104	126
Plymouth	166	174	152	131	114	144
Bristol	145	147	126	115	90	140
Swansea	169	168	152	146	123	135
Wolverhampton	190	194	141	135	107	135
Birmingham	181	196	167	149	130	163
Norwich	179	185	169	141	103	135
Leicester	194	188	159	141	126	131
Nottingham	174	197	165	157	128	161
Derby	153	165	132	124	85	123
Birkenhead	172	175	153	129	135	145
Liverpool	191	191	169	151	140	154
Bolton	185	176	152	146	117	162
Manchester	184	197	166	151	131	154
Salford	200	210	165	148	130	149
Oldham	180	180	152	144	127	159
Burnley	199	223	202	180	168	210
Blackburn	203	203	162	146	136	187
Preston	231	239	178	160	158	172
Halifax	155	144	128	109	89	122
Bradford	169	171	150	136	127	137
Leeds	178	183	158	138	132	158
Sheffield	178	198	163	146	127	140
Gateshead	167	185	154	139	151	135
Newcastle-on-Tyne	167	182	149	133	121	135
Huddersfield	156	140	129	111	99	131
Hull	178	179	158	140	135	155
Sunderland	172	179	151	139	129	151
CARDIFF	165	156	134	123	111	135

Chart B

DEATHS UNDER ONE YEAR PER 1,000 BIRTHS IN CARDIFF,
1885 - 1911.



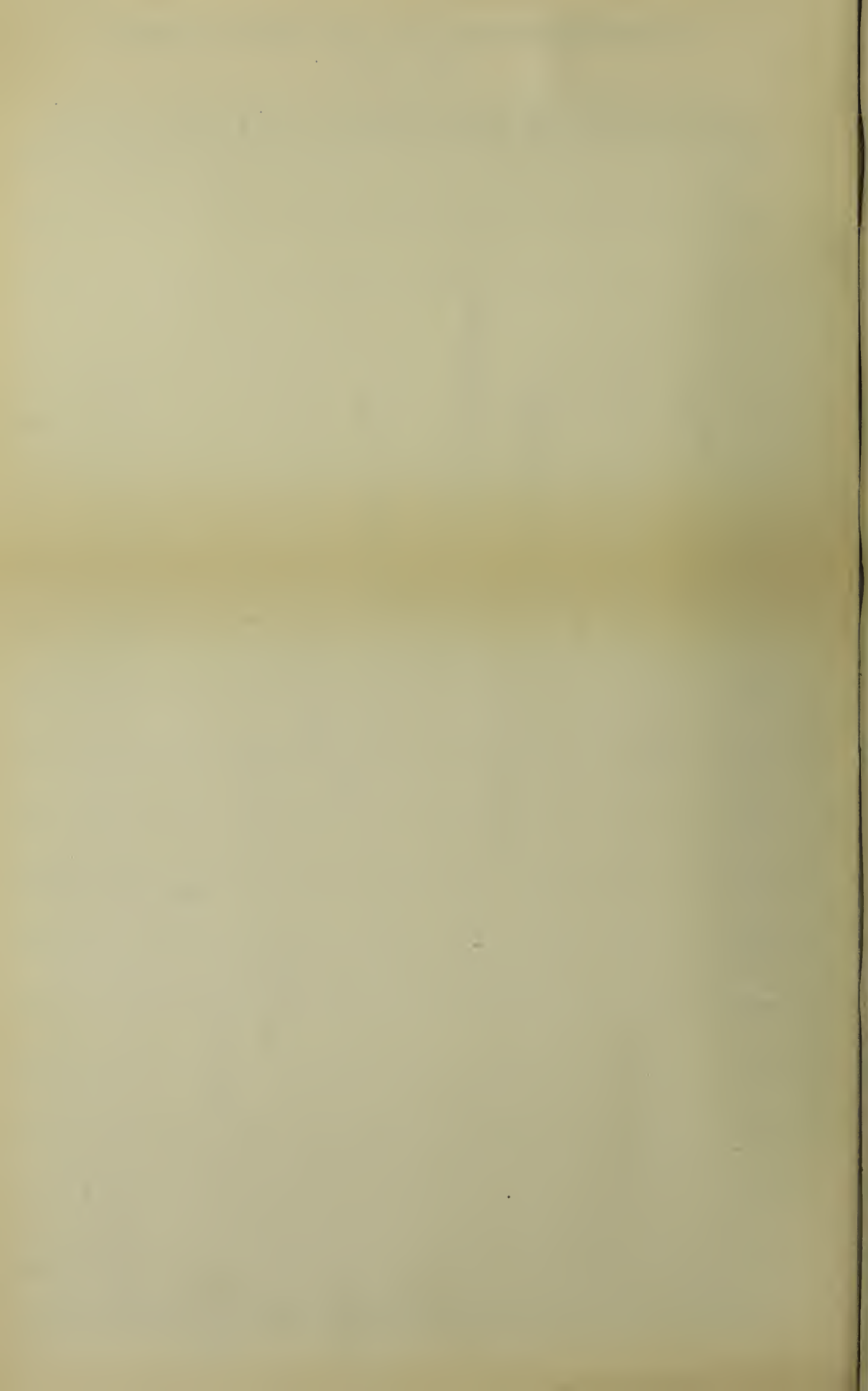


TABLE XLIV.

The following table indicates the difference between the mortality of legitimate and illegitimate infants in Cardiff during the years 1905–1911 :—

Year.	Births.		Percentage of illegitimate to total births.	Deaths under 1 year.		Deaths under one year per 1,000 births registered.		
	Total	Illegitimate		Total	Illegitimate	Total	Legitimate	Illegitimate
1905	5,140	164	3·2	607	50	118	112	305
1906	5,001	172	3·4	675	59	134	127	343
1907	4,865	146	3·0	639	51	131	124	349
1908	5,172	193	3·7	644	63	124	116	326
1909	5,026	206	4·0	518	52	103	96	252
1910	4,822	191	3·9	537	57	111	103	298
1911	4,730	192	4·0	639	68	135	125	354

Table IV. in the Appendix gives the number of deaths from stated causes in weeks and months under one year of age during 1911. Summarising these tables for the years 1906–1911, it will be found that the infant mortality at age periods per 1,000 births was as follows :—

TABLE XLV.

Year.	Deaths per 1,000 births.				
	Under 1 week	Under 1 month	Under 3 months	3—6 months	6—12 months
1906	19·3	38·5	70·1	32·1	32·5
1907	23·6	39·0	65·3	22·6	43·4
1908	26·1	42·1	66·1	24·9	31·1
1909	22·2	37·0	56·5	18·9	27·6
1910	23·6	41·4	63·8	23·2	24·2
1911	23·6	41·0	64·4	30·4	40·1

From the enclosed tables it will be seen that the decline in the rate of infant mortality has been entirely confined to the later months of infant life, the first three months of life being the period in which a high death-rate continues. During the year 1911, one out of every forty-two infants born died within seven days of birth, the deaths being due for the most part to premature birth, congenital defects, atrophy, debility and convulsions, conditions due in all probability to the state of health of the mother during pregnancy.

Of the 639 deaths from all causes under one year of age, 201 were due to diarrhœa, including in this term epidemic diarrhœa, epidemic enteritis and choleraic diarrhœa. This fatal form of diarrhœa was almost entirely confined to infants, and to the summer months, 74 per cent. of the fatal cases under one year occurring amongst infants between 3 and 12 months of age.

The fluctuation in the annual mortality from this disease depends to a very great extent upon the variations in the temperature and rainfall during the summer months. The effect of an abnormally high summer temperature combined with a deficient rainfall in raising the infant mortality was particularly noticeable during the summer of 1911. The months of July, August, and September were abnormally warm and dry, and some remarkably high temperatures were recorded. Table XLVI. shows the number of days in these months in the years 1906-1911 with maximum shade temperatures between 55° and 95°F. In July, 1911, a temperature above 75°F. was recorded on seventeen days, whereas this temperature was never reached in July 1909 or 1910. A temperature of 80°F. and upwards was recorded on eight days, which was not reached in 1906, 1909, or 1910. In August, 1911, a temperature above 75°F. was recorded on thirteen days, a temperature which was not reached in the same month in 1907 or 1910. In August, 1906, this temperature was recorded on four days, in 1908 on one day, and in 1909 on nine days. In September, 1911, temperatures above 75°F. were recorded on six days, whereas this temperature was not recorded in September of the four previous years, and only on three days in September, 1906. The rainfall was also deficient in these months to an abnormal extent.

A map is enclosed showing the local distribution of fatal diarrhœa amongst infants under one year during the third quarter of 1911. The enclosed Charts (C. and D.) show very clearly the relation between temperature and fatal diarrhœa. The importance of this relation was emphasized by the following circular issued by the Local Government Board :—

LOCAL GOVERNMENT BOARD,
WHITEHALL, S.W.,

18th August, 1911.

SIR,

The Local Government Board have had under their consideration the excessive child mortality, especially from diarrhœa and enteritis, which is accompanying the very hot and dry summer of the present year. They realise that some excess of mortality over that occurring in cool and wet summers is inevitable; but they desire to impress upon the Council the importance of taking such special steps as are practicable with a view to minimising the excess.

The Board are aware that in a large number of sanitary districts special efforts are made each summer to remove the nuisances and other conditions which favour excessive mortality amongst children. They suggest the following lines along which it is most important that action should be taken, but they do not wish it to be understood that this advice covers the entire ground or that it does not need to be supplemented by action directed towards the special needs of individual districts.

Firstly, it is important that exact advice should be given as to the feeding and management of children, and more generally as to preventing the exposure of their food to contamination from decomposing organic matter. The distribution of clearly worded leaflets is useful in this connection: but even more important are personal visits and the offer of practical advice to the mothers of babies born within the last twelve months. Exact and simple instructions are most likely to be followed if given during a period of special danger. In districts and towns in which the Notification of Births Act has been adopted, the records obtained under that Act will give valuable information in selecting the homes to which visits are now most urgently required.

Secondly, the full value of the personal instructions indicated above cannot be realised unless vigorous efforts are made to prevent the accumulation in or in the vicinity of the house of decomposing animal and vegetable matter. It is not necessary to do more than mention the importance of efficient scavenging, of frequent and, if practicable, daily removal of house and stable refuse, of domestic cleanliness, and of keeping all food properly protected. The Council may consider it advisable during the next few weeks to divert the sanitary inspectors from less urgent work, and to instruct them to make rapid visits with a view to securing efficient sanitation, especially in and about the houses of the working classes.

Thirdly, it is important that the Council should promptly ascertain in which parts of their district diarrhœa is especially prevalent, and should devote close attention to street and court scavenging and to the removal of stable and domestic refuse in these areas. Without waiting for the weekly death returns, efforts should be made to obtain information of cases of diarrhœa from health visitors and others who make domestic visits; and to impress upon parents the importance of immediate treatment of infantile diarrhœa. Apart from the medical notification of cases of epidemic diarrhœa in children, the visits of health visitors can be utilised for impressing upon parents the seriousness of diarrhœa amongst young children and the desirability of information being given to the Medical Officer of Health should a case of diarrhœa occur.

The Board will be glad if the Medical Officer of Health, in his annual report dealing with the current year, will set out the course of action adopted in the district to prevent diarrhœa and child mortality generally, in the special circumstances of the present year.

I am to request that you will at once hand the additional copies of this circular to the Medical Officer of Health.

It will be put on sale and further copies can be obtained from Messrs. Wyman and Sons, Ltd., Fetter Lane, E.C., either directly or through any bookseller.

I am, Sir,
Your obedient Servant,
H. C. MONRO, Secretary.

TABLE XLVI.

The following table shows the influence of the number of days with high maximum temperatures on the number of deaths from diarrhœa in Cardiff during the months of July, August and September, 1906-1911 :—

Period.			Number of days with maximum temperature between									Deaths from Diarrhœa
			°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	
			50—55	55—60	60—65	65—70	70—75	75—80	80—85	85—90	90—95	
July,	1906	...	...	...	8	15	5	3	...	...	...	8
„	1907	...	...	3	12	7	2	6	1	...	...	3
„	1908	...	...	...	9	11	7	2	2	...	...	9
„	1909	...	...	3	17	10	1	...	...	...	...	2
„	1910	...	...	2	18	8	3	...	...	...	...	8
„	1911	...	...	...	3	3	8	9	6	1	1	20
August,	1906	...	...	...	4	14	9	1	3	...	...	32
„	1907	...	...	...	13	17	1	...	...	...	...	6
„	1908	...	...	3	10	11	6	1	...	...	...	44
„	1909	...	...	...	8	12	2	9	...	...	...	21
„	1910	...	...	1	15	12	3	...	...	...	...	16
„	1911	...	...	...	...	11	7	7	2	3	1	143
September	1906	...	...	...	12	14	1	1	2	...	...	70
„	1907	...	...	4	6	11	9	...	...	...	...	15
„	1908	...	1	12	12	4	1	...	...	...	...	33
„	1909	...	1	12	14	3	...	...	...	...	...	19
„	1910	...	...	6	16	8	...	...	...	...	...	17
„	1911	...	...	8	9	2	5	3	2	1	...	44

The figures relating to temperature are for calendar months, and those relating to deaths are for periods of four or five weeks as the case may be.

TABLE XLVII.

Infant mortality rate in Cardiff during the third quarter of 1911, compared with the average rate in the 77 large towns of England and Wales, and with the rates in certain large towns for the same period.

TOWNS.			Deaths under one year per 1,000 births.	TOWNS.			Deaths under one year per 1,000 births.
77 Large Towns	...	...	225	Salford	...	...	237
London	...	...	203	Oldham	...	...	240
West Ham	...	...	240	Burnley	...	...	352
Croydon	...	...	161	Blackburn	...	...	288
Brighton	...	...	149	Preston	...	...	275
Portsmouth	...	...	221	Huddersfield	...	...	234
Plymouth	...	...	237	Halifax	...	...	192
Bristol	...	...	211	Bradford	...	...	219
Stoke-on-Trent	...	...	374	Leeds	...	...	274
Wolverhampton	...	...	216	Sheffield	...	...	194
Birmingham	...	...	269	Hull	...	...	278
Norwich	...	...	187	Sunderland	...	...	212
Leicester	...	...	206	Gateshead	...	...	181
Nottingham	...	...	287	Newcastle-on-Tyne	...	...	166
Derby	...	...	174	Rhondda	...	...	288
Birkenhead	...	...	229	Swansea	...	...	199
Liverpool	...	...	254	Merthyr Tydfil	...	...	259
Bolton	...	...	331	Newport (Mon.)	...	...	198
Manchester	...	...	240	CARDIFF	...	...	251

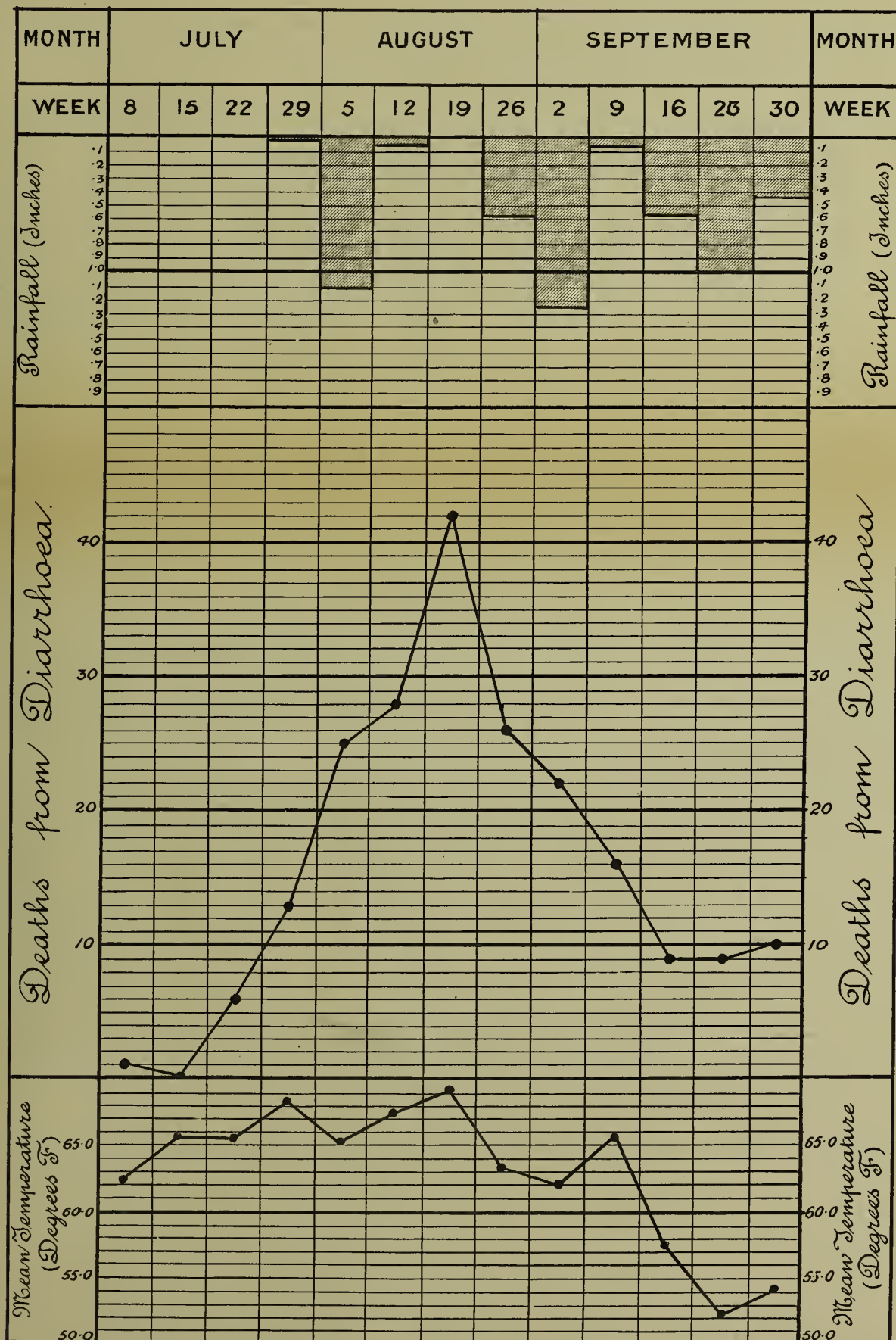
TABLE XLVIII.

Births, deaths under one year, deaths under one year from Diarrhœa, and rate of infant mortality in Cardiff, and in the Municipal Wards of Cardiff, during the third quarter of 1911 :—

Municipal Wards.						Births.	Deaths under one year	Deaths under one year from Diarrhœa.	Deaths under 1 year per 1,000 births.
Central	...	...	...	...	...	63	17	12	269
South	...	...	...	...	...	80	26	14	325
Cathays	...	...	...	...	...	158	40	21	253
Adamsdown	...	...	...	...	...	97	16	10	164
Riverside	...	...	...	...	...	97	25	16	257
Canton	...	...	...	...	...	153	34	17	222
Grangetown	...	...	...	...	...	186	42	24	225
Roath	...	...	...	...	...	121	31	16	256
Park	...	...	...	...	...	126	32	20	254
Splott	...	...	...	...	...	131	43	23	328
Cardiff (Whole District)						1,212	306	173	252

Chart C

SHOWING THE INFLUENCE OF THE RAINFALL AND MEAN TEMPERATURE ON THE NUMBER OF DEATHS FROM DIARRHOEA IN CARDIFF DURING THE SUMMER QUARTER OF THE YEAR 1911.



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J. H. B.	New York	1885
J. H. B.	New York	1885

TABLE XLIX.

Rates of infant mortality during the third quarters of the years 1906–1911 in the Municipal Wards of Cardiff :—

Municipal Wards.	Deaths under 1 year per 1,000 births.					
	Third quarter of					
	1906	1907	1908	1909	1910	1911
Central	216	118	191	118	259	269
South	191	131	114	227	200	325
Cathays	82	104	96	84	115	253
Adamsdown	152	156	124	176	130	164
Riverside	111	83	165	118	77	257
Canton	138	80	138	100	109	222
Grangetown	190	138	200	124	105	225
Roath	160	102	154	70	132	256
Park	98	81	107	55	34	254
Splott	198	111	239	108	78	328
Cardiff (Whole District) ...	154	114	158	110	107	252

TABLE L.

Deaths from Diarrhœa at various age periods in Municipal Wards during the third quarter of 1911.

Municipal Wards.	All ages.	Under 1 year.	1—2 years.	2—5 years.	5—15 years.	15—25 years.	25—45 years.	45—65 years.	65 years and upwards.
Central	13	12	1	...	...	...	...	...	...
South	19	14	2	...	1	...	...	1	1
Cathays	23	21	2	...	...	...	...	...	...
Adamsdown	13	10	2	...	1	...	...	...	...
Riverside	18	16	1	...	1	...	...	...	...
Canton	21	17	2	1	...	...	...	1	...
Grangetown	30	24	3	...	...	...	...	2	1
Roath	19	16	3	...	...	...	...	...	...
Park	23	20	2	...	...	...	...	...	1
Splott	28	23	4	...	...	...	...	...	1
Totals	207	173	22	1	3	...	...	4	4

TABLE LI.

The nature of food in 155 cases of fatal diarrhœa amongst infants under one year of age visited by the Health Visitors :—

Nature of Food.				Under 3 months.	3 to 6 months.	6 to 12 months.	Total.
Breast Fed	...	...	...	6	...	5	11
Breast Fed and Other Food	...			3	5	1	9
Cow's Milk	...	...	...	18	20	12	50
Cow's Milk and Other Food	...			...	7	12	19
Condensed Milk	...	...		6	20	15	41
Condensed Milk and Other Food	...			1	5	7	13
Patent Foods	...	...	...	1	5	6	12
Totals				35	62	58	155

Condition of 155 houses in which cases of death from diarrhœa amongst infants under one year occurred :—

Clean	...	...	...	...	...	108
Indifferently clean and badly ventilated					...	30
Dirty	...	...	...	...	...	17
Total				...	...	155

Of the 155 cases of death from diarrhœa amongst infants under one year, fifteen were illegitimate children. Three sets of twins, and three children each being one of twins, died. In eleven cases the infants also suffered from whooping cough, in twelve cases from marasmus, rickets or other predisposing disease. Thirty-one of the deaths from diarrhœa occurred amongst premature and delicate babies. Fifteen infants that had attended the "Consultation" died from diarrhœa; of these, six were regular attendants (three times or more), two had attended twice, and seven but once.

During the year particular attention has been given to the question of infant feeding, and full advantage has been taken of the opportunities offered by the Notification of Births Act and Midwives Act, which enable Sanitary Authorities to take steps to assist mothers in the rearing and management of their infants, and to instruct them in the simple laws of health.

NOTIFICATION OF BIRTHS ACT, 1907.—This Act, which was adopted in 1908, provides for the notification to the Medical Officer of Health of every birth within the City by the father, if residing in the house where the birth takes place, and by any person in attendance upon the mother at the time of, or within six hours after, the birth. The notification must be given to the Medical Officer of Health within thirty-six hours after birth.

The following table gives the number of births notified under this Act in each quarter of the year 1911, together with the number of still-births notified.

TABLE LII.

1911.	Births notified by Midwives.	Births notified by Doctors or Parents.	Duplicate Notifications Received	Actual Number of Births notified.	Still-births notified.
1st Quarter ...	1,097	84	28	1,181	48
2nd „ ...	1,121	88	32	1,209	53
3rd „ ...	1,069	73	20	1,142	35
4th „ ...	1,032	64	13	1,096	52
Totals ...	4,319	309	93	4,628	188

Births notified during the year 1911 ...	...	...	...	4,628
Births registered during the year 1911 ...	...	...	...	4,730
Number of still-born infants buried in the Cardiff Cemetery during the year 1911 ...	...	...	...	241

From this table it will be seen that 97·8 per cent. of the births registered were notified.

The Health Visitors, Mrs. Huntley and Miss F. Wade, acting under the immediate direction of Dr. Elizabeth Elder, in the Department of the Medical Officer of Health, visit each house in selected districts in which a birth has been notified, the districts chosen being those chiefly inhabited by the poorer classes. Altogether 3,958 primary visits, and 1,898 re-visits were made by the Health Visitors. On the first visit a printed form of instructions is given to the mother, and, if necessary, a verbal explanation of the instructions is made, and any necessary assistance is rendered.

Nature of food of 3,958 infants under one year visited by the Health Visitors :—

Breast Fed ...	...	...	...	3,236
Breast Fed and Other Foods ...	...	...	...	359
Cow's Milk ...	...	...	...	162
Cow's Milk and Other Food ...	...	...	...	56
Condensed Milk ...	...	...	...	109
Condensed Milk and Other Food ...	...	...	...	13
Patent Foods ...	...	...	...	23
Total ...	...	...	...	<u>3,958</u>

The “ Infant Consultation ” established by the Health Committee in 1910, has been continued during the year 1911, and has throughout been well attended by mothers and infants. Two rooms in the City Hall have been set apart for this institution, Dr. Elder and the Health Visitors attending for the purpose of giving advice on Tuesday afternoons in each week during the year. On these occasions the infants are medically examined and weighed, advice is given to the mothers as to the proper mode of feeding and rearing their offspring. The infants' progress is watched, their weight charted, and their homes are visited by the Health Visitors. The printed instructions are as follows :—

NOTES ON THE FEEDING OF INFANTS.

BREAST FEEDING.—The breast feeding of the new born infant by the mother is the natural method of feeding, and diminishes to the utmost the chances of the infant dying.

Infants should be fed at the breast for a period of six months at least, but if that cannot be done, for as long a period as may be. Weaning ought to be done about the tenth month, but, if possible, not during July, August, or September. *Infants should be fed regularly*, and not every time they cry. If asleep, they should be awakened to be fed at the proper time.

TIME TABLE FOR INFANT FEEDING.

AGE					Intervals by Day	Number of Night Feeds.
					Hours	
1— 6 weeks	...	...	...	...	2	2
6—12 weeks	...	...	...	...	2½	1
3— 6 months	...	...	...	...	3	1
6— 9 months	...	...	...	...	3	—
9—12 months	...	...	...	...	3½	—

If the mother has not sufficient milk, the child should be given all there is, and cow's milk in addition. The cow's milk should be diluted according to the age of the child.

The cleansing of the breasts before and after suckling, and the swabbing out of the child's mouth with warm water after it has been fed, are necessary precautions for the prevention of thrush and intestinal disorders.

WEANING.—Breast feeding should be gradually discontinued about the tenth month. Sterilized cow's milk should take the place of human milk; at first once a day, then twice a day, and so on until cow's milk entirely is being given.

ARTIFICIAL FEEDING.—If the mother cannot feed the child, the infant must be fed with cow's milk, with water or barley water added.

To make Barley Water, put a tablespoonful of *Pearl Barley* into a pint of cold water, boil for half an hour, and strain through muslin. Make fresh daily. If *Patent Barley* is used, two teaspoonfuls should be boiled in a pint of water.

Up to the age of seven or eight months, milk is the only natural food suitable for children.

DIRECTIONS FOR FEEDING INFANTS WITH COW'S MILK.

Age of child.				For each meal.	
Under 4 weeks	...	...	{ 1 Part Fresh Milk ... 2 Parts Boiled Water ... 1 Teaspoonful Cream ...	4 Tablespoonfuls.	
4 weeks to 3 months	...	...	{ 1 Part Fresh Milk ... 1 Part Boiled Water ... 2 Teaspoonfuls Cream ...	4, gradually increasing to 8, Tablespoonfuls.	
3 months to 6 months	...	...	{ 2 Parts Fresh Milk ... 1 Part Boiled Water ... 3 Teaspoonfuls Cream ...	8 Tablespoonfuls, increasing to 12 Tablespoonfuls.	

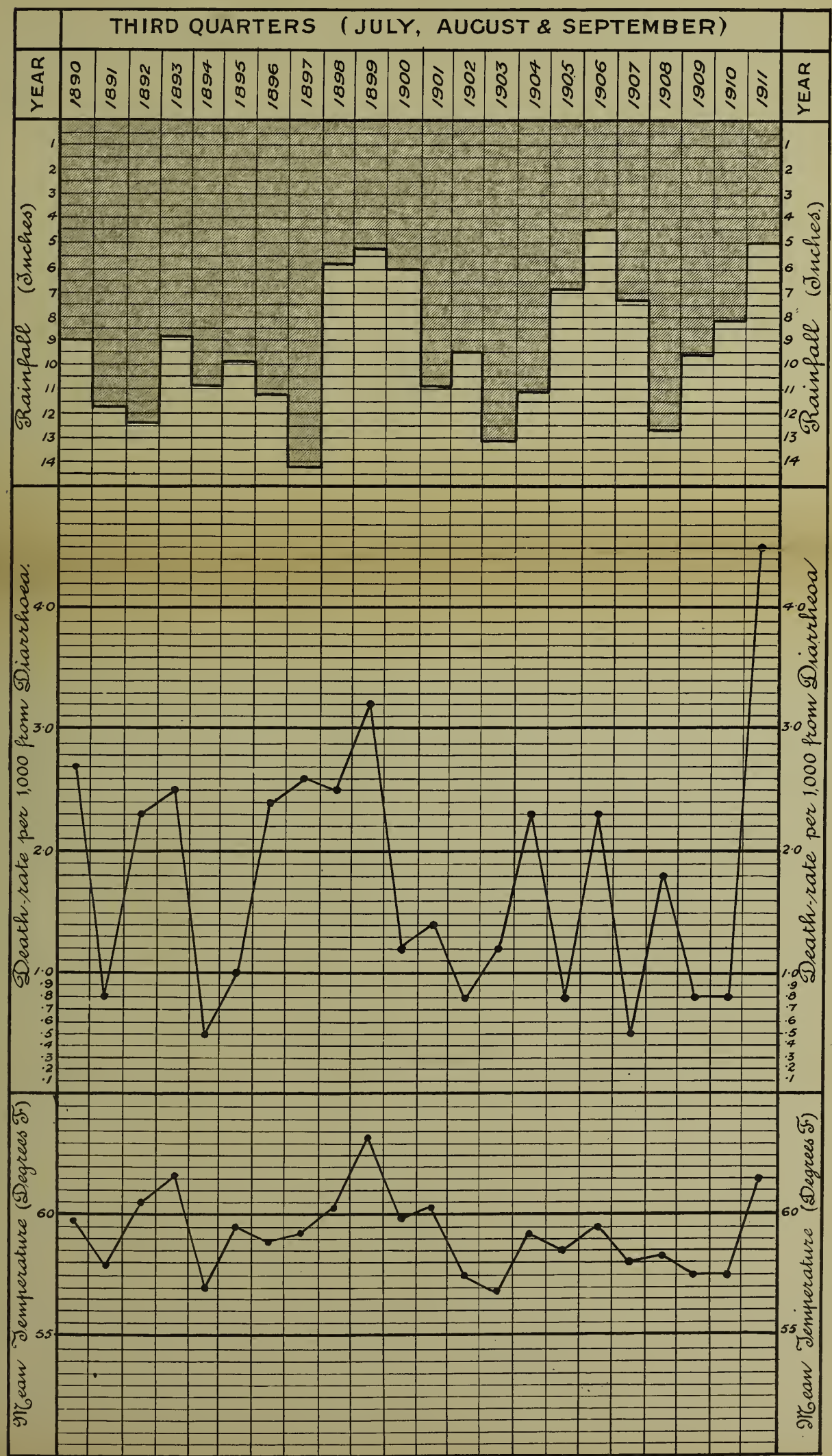
The mixture should be scalded. A small teaspoonful of brown sugar should be added to each pint of the mixture.

SIX TO TWELVE MONTHS.—The child should be fed on undiluted cow's milk, each meal consisting of 10 to 12 tablespoonfuls.

When eight months of age, infants' teeth and jaws require exercise for their proper development. From the eighth month, therefore, give the child something hard at which to gnaw—a hard crust or a Wallaceite biscuit—at first *immediately before* one, and gradually *before* three of its meals.

Feeding bottles should be boat shaped, and fitted with short rubber teats. Long feeding tubes should be avoided.

SHOWING THE INFLUENCE OF THE RAINFALL AND MEAN TEMPERATURE ON THE DEATH-RATE FROM DIARRHOEA IN CARDIFF DURING THE SUMMER QUARTERS. OF THE YEARS 1890-1911.



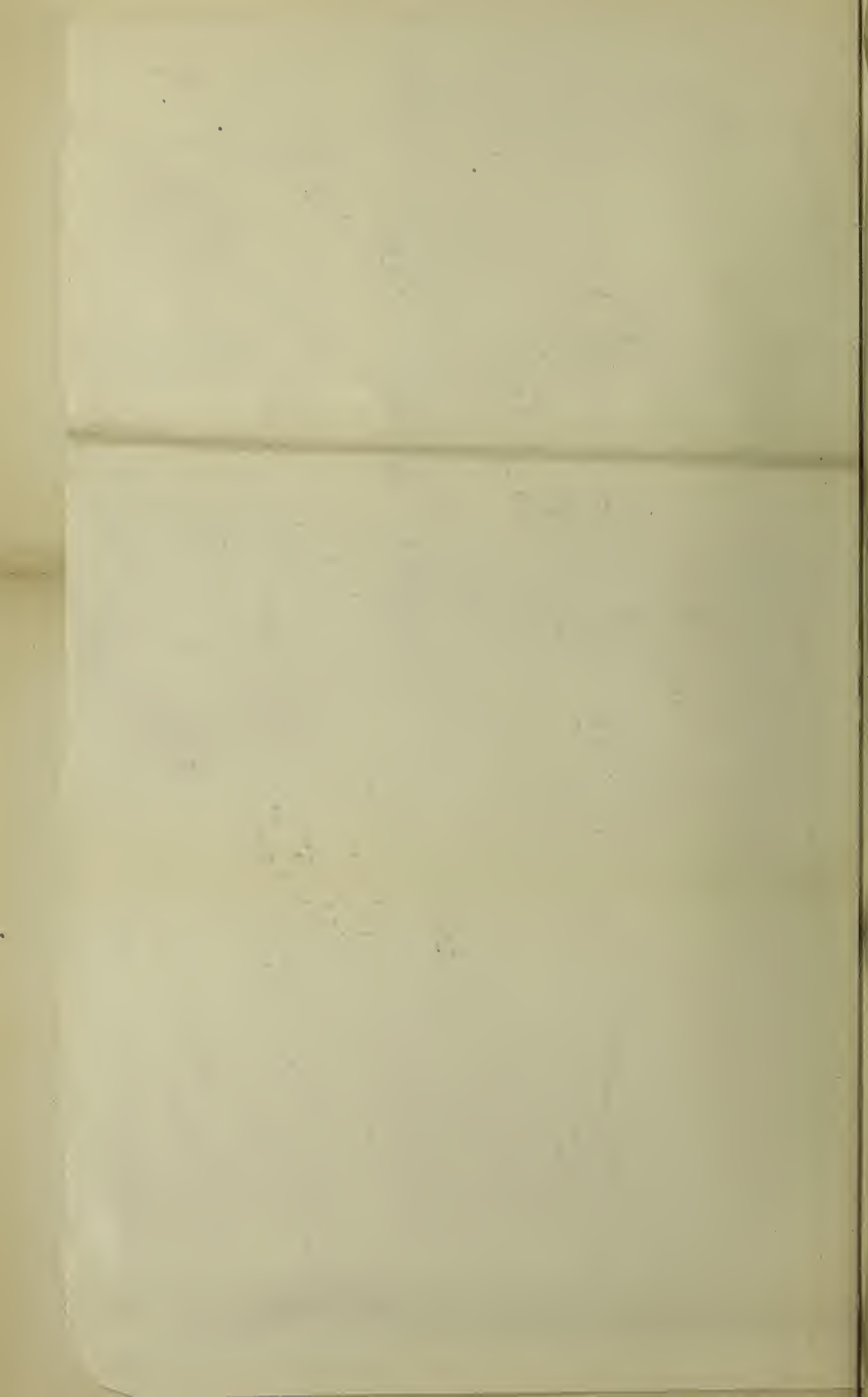




MAP OF CARDIFF

Showing the distribution of Deaths under 15 years of age from Diarrhoea during the third quarter of the year 1911.

W. LEWIS
BOOKSELLER & STATIONER
ORDNANCE MAP DEPOT
22, DUKE STREET, CARDIFF



Feeding bottles should be kept scrupulously clean, two being used alternatively, each bottle being boiled and rinsed immediately after use. The *teats* should be reversed and boiled after use.

Dummies or comforters should not be used. They are a cause of diarrhoea, and at a later age of adenoids.

An infant should be washed thoroughly all over every day, and dried carefully with a soft towel. The back and buttocks should afterwards be powdered with Talc Powder and Boracic Powder.

Teething powders should not be used.

NOTE.—Milk is sterilised by being placed in a jug, and kept in a saucepan of boiling water for twenty minutes.

EDWARD WALFORD, M.D.,
Medical Officer of Health.

ADVICE MEETINGS FOR MOTHERS.

Dr. Elder and the Health Visitors of the Cardiff Corporation will be glad to meet mothers with infants for advice, etc., at the City Hall (entrance on North Side) at 2-45 to 4 p.m.

From Canton and Riverside	...	...	...	...	...	1st Tuesday of Month.
From Roath, Park and Splott	...	...	...	...	...	2nd " "
From Grangetown and South	...	...	...	...	...	3rd " "
From Central, Cathays, and Adamsdown	...	...	...	...	...	4th " "

(Tuesdays following Bank Holidays excepted).

CITY HALL,
CARDIFF.

Dr. Elder reports that during the year 1911, 45 afternoons were devoted to the "Infant Consultation." The total number of attendances amounted to 3,383, and 1,422 individual infants were kept under observation. In addition to these, there were 508 casual attendants. The average attendance was 86. Of the infants attending the "Consultation," 40 died, 32 under and 8 over one year. During the year two "baby shows" were held in connection with the institution, there being 331 entries.

MIDWIVES ACT, 1902.—This Act has now been in operation since the 1st April, 1903, and is administered locally by the Health and Port Sanitary Committee, with the Medical Officer of Health as Executive Officer.

The Act provides for the education of midwives, and for the certification and enrolment of women qualified to act in that capacity. No person can now habitually act as a midwife, otherwise than under the direction of a qualified medical practitioner, unless she be certified under this Act. The Certificate of the Central Midwives Board can only be obtained after the training specified in the Rules of the Board, and after passing the Board's Examination. A certain number of midwives were, however, placed on the Roll of Midwives and certified in virtue of their having been in practice before the passing of the Act.

A course of training has been established at the University College of South Wales and Monmouthshire, in Cardiff, for those who intend to present themselves for the Board's examination. The instruction is given by Dr. E. J. Maclean, who informs me that during the year ended 31st December, 1911, 91 pupil midwives attended the course, 32 of whom resided in Cardiff.

The Cardiff City Council and the Glamorgan County Council contribute towards the expenses of this course, and have the privilege of nominating women for free studentships in midwifery. Twelve such studentships are awarded annually to women residing in Cardiff.

The Committee of the Queen's Nursing Institute have established a Maternity Department, and take pupils for the practical training of midwives. Pupils residing in Cardiff may also obtain their practical training from medical men practising in the district, and from certified midwives recognised by the Central Midwives Board. Practical training can also be obtained by the resident nurses at the Cardiff Union Infirmary.

The supervision of the practice of midwives has been efficiently carried out by Mrs. L. Huntley, the Inspector appointed by the Local Supervising Authority, who holds the licence of the Obstetrical Society and is a certified midwife.

The following tables give information relating to the administration of the Midwives Act during the year 1911.

Number of Midwives on Roll for 1911	123
-------------------------------------	-----	-----	-----	-----

QUALIFICATIONS OF CERTIFIED MIDWIVES.

<i>Bona Fide</i>	...	...	...	...	72
Certificate of London Obstetrical Society	...	...	...	...	9
Certificate of Central Midwives' Board	...	...	...	...	42
Total	...	...	...	...	123

Particulars as to appliances, etc. possessed by Midwives :—

Washable dresses	...	...	...	...	...	123
Bags for appliances	...	...	...	...	...	122
Appliances—complete	...	...	...	...	...	109
Appliances—part	...	...	...	...	...	14
Case books	...	...	...	...	...	113
Record books	...	...	...	...	...	113

Records of sending for medical help received from Midwives :—

In case of the mother	...	...	...	...	...	225
In case of the child	...	...	...	...	...	31
Total	...	...	...	...	...	256

RECORDS OF SENDING FOR MEDICAL HELP BY MIDWIVES.

IN CASE OF THE MOTHER :—

Abortion	...	...	...	...	...	2
Delay in Labour	...	...	...	...	...	82
Presentation wrong or not felt	...	...	...	...	...	32
Ante-Partum Hæmorrhage	...	...	...	...	...	15
Post-Partum Hæmorrhage	...	...	...	...	...	11
Retained Placenta	...	...	...	...	...	23
Ruptured Perineum	...	...	...	...	...	26
Pyrexia	...	...	...	...	...	5
Small Pelvis	...	...	...	...	...	8
Growth on Cervix	...	...	...	...	...	4
Placenta Prævia	...	...	...	...	...	3
Illness of Mother	...	...	...	...	...	14
						225

IN CASE OF THE CHILD :—

Feebleness of Infant	...	...	...	...	...	15
Death of Infant	...	...	...	...	...	2
Deformity	...	...	...	...	...	1
Stillbirths	...	...	...	...	...	5
Large Infant...	...	...	...	...	...	4
Discharging Eyes	...	...	...	...	...	4
						31

Still-births notified by Midwives	...	...	...	...	188
Still-births attended by Midwives without Medical Practitioner	...				22
Midwives suspended from practice	...	...	...	...	3
Cases of Puerperal Fever attended by Midwives	...		...	...	8

From the foregoing remarks it will be seen that most of the recommendations made to your Authority in a Special Report upon Infant Mortality in 1906 have been adopted. Putting aside the influence of a high summer temperature and some other influences, over which the Sanitary Authority has no control, the chief causes contributing to the mortality of infants may be summarised as follows : Bad health and unsuitable employment of the expectant mother, ignorance and intemperance of the mother, insanitary and dirty houses, accumulations of filth, insufficient clothing, improper food and bad methods of feeding, contamination of milk by dirt, dust, and harmful or specific organisms. Our endeavours, therefore, have been directed to the instruction of mothers at the " Infant Consultation " and at home in the methods of infant feeding and rearing infants, to the removal of accumulations and uncleanly surroundings, to the provision, as far as possible, and when necessary, of better ventilation, and of other sanitary improvements, and to the control and supervision of the milk supply.

In the above-mentioned report, reference was made to the desirability of increasing the watering of streets, and of great attention being paid to the cleansing of streets, lanes, and courts during the hot weather. It unfortunately happens, at this time of the year, especially in unusually hot summers, with a small rainfall, that the necessity arises for restricting the public water supply. This was especially the case during the year 1911, in which the meteorological conditions were most unusual. It would, I am sure, be a wise policy on the part of the Corporation to utilise for sanitary purposes the water which is available from the Ely culverts, instead of using for street watering and for flushing sewers and gullies the water from the Taff Fawr Waterworks, which would then be used for drinking and domestic purposes to its full extent. It is noticeable that a low rate of infant mortality invariably coincides with a wet summer. It is most probable, therefore, that an increased supply of water in the streets and sewers would have the effect of reducing this mortality.

A special report was submitted to the Health Committee in September, 1911, upon the provision of a Municipal Milk Depot, of which the following is an extract :—

" Previous reports have made you familiar with the amount of sickness and even mortality amongst infants which may be attributed to an impure milk supply, and it is obvious that adults and all classes of the community may also suffer in health from the consumption of unclean or specifically infected milk. In such circumstances it is the duty of the Sanitary Authority to take such steps as may be necessary and possible with a view of protecting the health of the public. At the present time the Sanitary Authority supervises the milk supply under the powers conferred by the Public Health Acts, the Infectious Disease Prevention Act, the Cardiff Corporation Act, 1909, the Dairies, Cowsheds and Milkshops Orders and Regulations, and the Sale of Food and Drugs Acts. These Acts and Regulations are enforced in Cardiff to their fullest extent, and so far as the Sale of Food and Drugs Act is concerned, the number of samples submitted to the Public Analyst is much above the average in large towns, but none of these Acts give power to a Local Authority to establish a milk depot, and in fact no such power exists. In places where these depots are in operation they have been established without any such specific power.

The danger of milk as a vehicle of disease is generally recognised ; outbreaks of enteric fever, scarlet fever, diphtheria and diarrhoea have frequently been attributed to infected milk. In the majority of these outbreaks the infection has been of human origin, the milk becoming infected either at the farm, in transit, in distribution to the consumer, or perhaps even in the consumer's house. In the case of tuberculosis, however, the infection is usually derived from the cow, which is known to suffer to a considerable extent from a disease which is indistinguishable from human tuberculosis. To avoid these several dangers, efficient supervision over the milk supply must be exercised at every stage. In towns in which the milk supply is for the most part obtained from a distance, the consumer is to a great extent unable to protect himself against infected milk ; he relies almost entirely upon the Sanitary Authority and its officials.

To ensure a pure milk supply, supervision is required (1) at the farm, (2) during transit, (3) at the dairy or milkshop, and (4) at the consumer's house.

The various Acts of Parliament and Regulations framed for the protection of the public in this respect have already been enumerated. A perusal of these will show that they offer a certain amount of protection. If milk is known or suspected to convey disease, the supply may be stopped, if water is added to, or cream abstracted from, milk, and it falls below a certain standard, convictions may sometimes be obtained in the Police Court, but in general the means for protecting milk from contamination or infection in the various stages as it leaves the cow until it reaches the consumer are totally inadequate.

Attempts have been made to procure this protection in this and other countries by municipal or state control. In its most complete form this control has been exercised over the farm buildings and those employed thereon, over the dairy, and over the storage and distribution of the milk through the various stages until it reaches the consumer. In some instances, by means of extreme cleanliness, and by keeping the milk at a low temperature until it is delivered, it has been found possible to supply milk which is comparatively free from bacteria, as these organisms require a certain temperature for their development and multiplication. In other instances the municipality has been content with a supervision of the storage and with the distribution of sterilized or pasteurized milk from a municipal depot, with, perhaps, conditions in the milk contract intended to secure cleanliness and purity. The former method is undoubtedly the best, but it is the most difficult to carry into effect, as it entails a constant and complete supervision, veterinary and sanitary, over the farm premises, the cows, the milk vessels, and the persons employed throughout every stage of the milk business.

It is difficult to see how this can be satisfactorily accomplished unless this business is carried on entirely by the controlling authority. Fresh milk, produced under conditions of extreme cleanliness and kept at a low temperature, forms probably a more suitable article of diet for children than milk sterilized or cooked in any way, although these processes may be necessary to get rid of the unavoidable contamination by dirt and micro-organisms, which are invariably found in milk supplied under ordinary conditions.

Numerous experiments have shown that milk produced with proper care, and kept cool at a temperature not exceeding 40° F., contains comparatively few bacteria. In certain States of America a standard temperature is enforced by law. The Milk Inspectors in New York are empowered by the Regulations to throw away any milk of a higher temperature than 50°F. Dealers have, therefore, in their own interest, to take the necessary measures for cooling milk supplied to the public.

Probably one of the most complete methods of milk supervision is that described by Dr. Goler, the Health Officer of the City of Rochester, N.Y., U.S.A., in the following terms:—

‘A central station at which the milk is prepared is organized each season on a farm outside the city, where a trained nurse and assistants have full control of the cows, utensils, bottles, &c., and where all of the milk work is carried on in a portable milk laboratory. Everything coming in contact with the milk is thoroughly sterilized in steam sterilizers. The milk itself is not subjected to any pasteurizing or sterilizing process. Sterilizing and pasteurizing are only an open invitation to the milkman to be careless in the production and handling of milk.

‘At the milk station on the farm the milk is taken from clean, well-fed, tested cattle into sterile cans, which are carried to the barn in sterile cheesecloth bags. Just before milking, the cows’ udders are washed. A sterilized cheesecloth fly cover is placed over the cow, the first portion of the milk being rejected. So soon as the cans are filled they are immediately covered by a layer of cheesecloth held in position by a rubber band. The cans of milk thus covered are immediately taken from the barn into the laboratory, about 200 yards away, where the milk is properly diluted, sweetened, and turned off into sterile nursing bottles of various sizes of the Siebert type. The bottles are corked with sterile rubber corks, placed in racks, covered with cracked ice, and immediately transferred to the city for use. Of the cleanliness of milk prepared in this way, forty-three daily samples were found to average not more than 14,000 bacteria per cubic centimetre, while the city milk for the same period approximated 235,000 bacteria per cubic centimetre.’

The Rochester Milk Depot, including farm premises, cattle, etc., is entirely a municipal undertaking. In other States in America and in other countries, notably in Denmark, somewhat similar methods have been adopted. In some of these places the work is carried on entirely by the municipality, in others it is more or less under municipal control.

In Denmark particular attention is paid to the milk supply of the community, and it may therefore be of some assistance to your Committee to give a short summary of the methods adopted, taken from a report published by Dr. Henri de Rothschild, who was charged by the French Minister of Agriculture to study the conditions under which the milk trade is carried on in Denmark. Dr. de Rothschild expresses the opinion that among all the cities in Europe, Copenhagen is best provided with milk, the trade being mainly in the hands of two companies, which carry on their work in a scientific manner, and take the greatest pains to ensure not only that the quality of the milk be excellent, but that it shall be retailed under conditions which must prevent fraud and at a reasonable price. The two companies are named respectively the ‘Dairy Supply Society of Copenhagen’ and the ‘Danish Milk Company.’ The first named Company works upon the principle of furnishing milk preserved fresh by keeping it at a low temperature by means of ice, the second pasteurizes its milk.

The conditions under which the ‘Dairy Supply Society’ sends out milk are as follows:—

- (1)—It must be obtained from cows ascertained to be healthy by veterinary examination and fed in a proper manner.
- (2)—It must be manipulated from the time of milking until it is sold in a rigorously aseptic manner.
- (3)—It must be kept during the same period by some method which shall render the development of the bacteria which it may contain impossible.

The Society does not own any farms or dairies, but accepts milk from any farmer or owner of cows, subject to certain conditions laid down in a contract, by which on pain of fine or the cancelling of the contract the farmer must rigorously abide.

Since the milk is not pasteurized, it must leave the farm chemically and bacteriologically pure. To ensure this, the contract provides that the farmer shall allow the inspection of his cows by the Veterinary Inspectors of the Society, and shall strictly obey their instructions. Seven Veterinary Surgeons are employed, and each visits the farms in the district allotted to him every fortnight, and makes a report of his inspection to the Company.

The milking is done with great care and cleanliness and in a good light. The milk is drawn into pails and immediately strained through a clean woollen cloth into a refrigerating apparatus, which lowers its temperature to 41°F. Women Inspectors are employed to overlook the production of the milk in all its details, and they report to the Society periodically as to the state of cleanliness and hygiene of each farm. The milk, having been cooled to the required temperature, is put into cans supplied by the Society, and sent to the Station in time to catch a particular train. It is placed as soon as possible into special and well ventilated wagons and forwarded to its destination. The empty cans, having been cleansed, are returned to the farmers.

The Society buys the milk at the rate of 6½d. a gallon, and has a factory and special station for the receipt and dispatch of the milk. At the factory 180 persons are employed in cleansing and sterilizing the utensils. At the station the milk is filtered through three layers of gravel and sand. This filter is cleansed daily by forcing through it a boiling solution of sodium carbonate, and sterilized by passing steam through it at about 302°F.

There is a special department for the supply of infants' milk. The milk is treated in exactly the same manner as the other milk; it is sold unprepared, without sterilization or pasteurization, it is drawn from a reservoir under pressure into bottles, which are placed in baskets and covered cases, and kept in ice until they are delivered to the customers. A certain proportion of this milk is modified by adding $\frac{1}{3}$, $\frac{2}{3}$ or $\frac{1}{4}$ water and small quantities of sugar in proportion to the dilution, in order to make it resemble human milk. The price paid for infants' milk is somewhat higher than the rates mentioned for the general supply. It will be seen, therefore, that this Society endeavours to supply clean, fresh, unsterilized milk at a temperature which prevents the growth and development of injurious bacteria.

On the other hand, the 'Danish Milk Company' sells, wholesale and retail, milk which is kept fresh during its transport to Copenhagen by partial congelation, and submitted to pasteurization on arrival at the manufactory. On leaving the pasteurizers, the milk is at once cooled and bottled. Once filled and corked they are exposed and kept in ice rooms, at a temperature of 39·2°F., until they are sent out. Neither of these companies appear to be associated financially with the municipality of Copenhagen, and it is stated in the prospectus of the 'Dairy Supply Society' that a substantial dividend is earned upon the money invested, and that any profit beyond 5 per cent. per annum is devoted to the supply of milk at reduced charges to charitable institutions.

The milk depots in this country have all been established with a view to supplying infants with milk, and in fact are usually called 'Infants' Milk Depots.' The first one was opened on August 8th, 1899, by the St. Helens Corporation. Depots were opened in Liverpool, Ashton-under-Lyne, and in Dukinfield in 1901, in Battersea in 1902, in Leith and Bradford in 1903, and in Burnley, Glasgow and Dundee in 1904, and in some other places since that date; all these are municipal institutions. The first private depot in this country was established in 1903 by the York Health and Housing Association, and in November, 1904, a depot was opened in Finsbury by the Finsbury Social Workers' Association.

For the information of your Committee, which is about to take this matter into consideration, I would submit a short description of the Battersea Milk Depot, as being the only one with which I am at all familiar, and which may be taken as a fairly typical specimen of a British milk depot. For the information concerning this Institution I am indebted to Dr. McCleary, who was, at the time of my visit, Medical Officer of Health for Battersea, and who has since published a detailed account of it in his book on 'Infant Mortality and Infants' Milk Depots.'

Dr. McCleary states that, 'In the working of the depot care is taken to safeguard the milk from pollution before it reaches the depot. The farm from which it comes was selected by the Medical Officer of Health from a number of farms offered by the contractor, the cows were inspected by a veterinary surgeon and certified to be free from tuberculosis after the application of the tuberculin test. The cows are milked in the open air, and never enter a shed except for a few weeks in January and February. The milk is strained in the field immediately after milking, and is then sent to a creamery half-a-mile from the farm. Here it is again strained, and at once cooled down to 40°F. It is then placed in churns which are sealed with a leaden seal, and is conveyed in these churns to the depot.'

The following are the conditions accepted by the contractor:—

1.—The contractor shall supply milk which must contain not less than 3·25 per cent. of butter fat, and 8·75 per cent. solids not fat, and cream which must contain not less than 50 per cent. of butter fat, and the milk and cream must be free from chemical preservatives or colouring matter, and be drawn from healthy cows only.

2.—The contractor shall deliver the milk and cream in sealed churns or cans to the Council's Depot, No. 28, York Road, before 8 a.m. every morning, Sunday excepted.

3.—The contractor must be prepared to increase or diminish the supply within reasonable limits at one day's notice from the Medical Officer of Health.

4.—A warranty ticket must be attached to every churn and can, guaranteeing its contents to be in accordance with the specification.

5.—No charge is to be made for the use of churns or cans, which when empty are to be removed by the contractor from the Council's depot free of charge.

6.—All pails, strainers, railway churns, refrigerators, fittings and other vessels and implements brought into contact with the milk shall be thoroughly inspected before being used, be properly cleansed, scalded and dried immediately after being used, and exposed to the air in a clean place, without lids or covers.

7.—The farms, water supply, drainage system, farm buildings, dairy, and cattle shall be open at any reasonable time to the inspection of the Council's Medical Officer of Health, or any person duly authorised by him, and no milk or cream shall be supplied from any farm which has been certified by the Medical Officer of Health to be in an insanitary condition.

8.—The cows shall be subject, if required, to a periodical veterinary inspection by a Veterinary Surgeon duly appointed by the Council, and the Contractor shall undertake not to supply milk or cream from any cow which is diseased, newly calved, or under physic.

9.—The cows shall during the summer be pastured, and during winter so fed that no taint is imparted to the milk. The contractor undertakes to use no brewer's grains (wet or dry), turnip-tops or vetches.

10.—The udders of the cows shall be carefully cleansed before milking, and the utmost possible cleanliness observed at every point connected with the cows, cowhouse, utensils and attendants.

11.—The milk shall be carefully strained and cooled to at least 56°F. immediately after milking, over a Lawrence or other cooler of approved design, and shall be delivered at the Council's Milk Depot at a temperature not higher than 56°F.

12.—The contractor shall undertake that the refrigerators and the in-flow and out-flow pipes, etc. are examined daily in order to see that everything is in thorough repair, and that there is no leakage.

13.—No milk or cream shall be supplied from any farm on which there is a case of infectious disease.

14.—The Council shall have the right to take samples of the milk or cream at any time, either at the farm or any point in course of delivery.

15.—From June to September inclusive, the contractor, when required by the Medical Officer of Health, shall pasteurise the milk before delivery.

16.—Should any breach of any one or more of these clauses be at any time proved, the contractor shall pay to the Council the sum of twenty pounds, or any lesser sum the Council may think fit, as and for liquidated damages, for each and every time such breach of any clause shall have been committed, and the Council shall deduct the same from any amount which may be due to the Contractor.

' The Battersea Depot is a three storied building, which was adapted for the work. The two upper stories are occupied as a residence by the manageress and some of the staff, and the work is carried on in four rooms on the ground floor. The front room is used as a shop, in the next room the babies are weighed, the third is the bottle-washing room, and in the fourth the processes of modifying, bottling and sterilizing are carried out. The appliances in use are as follows :—1 one h.p. boiler, 1 sterilizing chamber with trolley, etc., 2 bottle filling machines, 1 cold storage chamber, 1 cooling tank, 1 electric motor, 3 soak tanks for dirty bottles, 3 sets of rinsing jets, 1 milk strainer, draining racks, churns, cans, measures, wire baskets, graduated 7oz. bottles, etc. The amount expended in alterations to premises and appliances since the depot was opened is about £700.

' The milk arrives at the Depot about 6 a.m. It is carefully strained through a Ulax strainer, and is then (for infants under six months) modified by the addition of water, cream, sugar, and a little salt so as to resemble human milk as far as possible. After modification the milk is bottled, and is then, the stoppers being closed, placed in the sterilizing chamber. Steam is injected and the temperature raised to 212°F., where it remains for from fifteen to thirty minutes. The bottles are then taken out of the sterilizer and rapidly cooled in the cooling tank.

' The bottles are supplied in wire baskets, each basket holding from six to nine bottles and containing a twenty-four hours' supply. Each bottle contains sufficient milk for one meal, the amount varying with the age of the infant. Infants under two months receive nine bottles per day; older children receive fewer bottles, as they are fed less frequently. The next day the basket of empty bottles is returned and a fresh supply obtained.

' The charge for the full weekly supply of humanized milk for infants under six months is 1/6, payable in advance. If a day's supply only is taken, the charge is 3d. The charge for a full weekly supply for infants aged from six to twelve months is 2/-, or 4d. per day. Children above one year old are charged 2/6 per week, or 5d. per day.

' This method of infant feeding is a very simple matter as far as the mother is concerned. When feeding time arrives all she has to do is to place the bottle, unopened, in a basin of warm water until it reaches body temperature, to open the bottle, put on a rubber teat supplied at the Depot, and feed the baby from the sterilized bottle direct. There is no need for a ' feeding bottle,' which alone is a great advantage.'

Perhaps the most complete municipal milk depot in this country is that of Liverpool, in which the arrangements are somewhat similar to those in Battersea, although owing to the extensive nature of the work carried out the expense is much greater.

None of the English Milk Depots is self-supporting. They differ in some material respects from the milk depots abroad. In France these depots are invariably associated with ' Infant Consultations,' with the out-patient departments of hospitals, or with the maternity department of special hospitals. No child is supplied with milk from the depot except under medical advice. The mothers are required to attend regularly with their infants, whose progress is carefully watched by the medical staff of the institution. The combined work of the depot and Infant Consultation forms a well organized plan for the reduction of infant mortality. To sell pasteurized or humanized milk in a Municipal Depot without any medical control, as in some of the English Depots, would seem to be waste of money, as there is no means of knowing whether the results are good or bad.

In a special report to your Committee upon Infant Mortality, dated January, 1907, I called your attention to this point, and advised as a preliminary step that an ' Infant Consultation ' should be established in Cardiff, feeling sure that if you decided subsequently to establish a milk depot it should be in connection with the ' Consultation,' and should form part of the scheme now in operation for the reduction of infant mortality, and should be worked on the continental lines set forth in the report.

The ' Consultation ' has now been established for several years, and under Dr. E. F. Elder's immediate supervision, helped by the Lady Health Visitors, is doing most excellent work. The results would doubtless be still better if a supply of pure milk could be made available for distribution to suitable cases attending the ' Consultation.' At the present time, especially in the hot weather, it is most difficult for poor people to obtain clean and wholesome milk, and still more difficult for them to store such milk even if they are fortunate enough to obtain it.

Dr. George Newman, formerly Medical Officer of Health of the Metropolitan Borough of Finsbury, reporting to his authority upon milk supply, remarks in relation to Municipal Milk Depots that, ' There can be little doubt that this kind of milk supply may be of great service to the children of the poor in the reduction of infantile mortality due to the use of contaminated or infected milk. It is not, however, of the nature of control of the milk supply, but rather of a specialized supply, to meet special needs. There is evidence to show that at Liverpool, Battersea, and other places, it has had beneficial results in meeting the special need. It has, however, several limitations unless properly managed. Its objects being the saving of life and prevention of infant diseases, it is necessary that the system should be individualised, *i.e.* each mother must be separately advised, each infant inspected and weighed periodically, each home inspected, the condition of the milk regularly tested, and the source of milk kept under control, the cows and cowsheds from which the milk is derived being supervised by a Veterinary Surgeon and the Medical Officer of Health. And here at any event the quality of the milk used must reach a high standard, chemically and bacteriologically. If these conditions are not fulfilled it seems to the writer that a municipal sterilized milk supply can only be a palliative measure of transient usefulness.'

The importance of educating mothers at the ' Consultations ' or in their homes is shown by the following incident related to me. At one of the milk depots in this country a mother was supplied with a bottle of sterilized milk carefully sealed down and ready for use. She was instructed to place the bottle in warm water so as to raise the milk to the temperature of the human body. After warming the milk, she poured it into a dusty jug, and inserted her dirty finger into it to ascertain the temperature. Unless, therefore, the public is educated so as to understand the object of the means adopted to protect the milk from contamination, the benefit of all the elaborate precautions may be entirely lost. In my opinion, a milk depot established and maintained in connection with the existing Infant Consultation in Cardiff (and in which there would be a complete supervision of every detail in the supply of milk, from the time it leaves the cow until it reaches the consumer) would be a useful institution, and a benefit to the community, by assisting in the reduction of the mortality amongst very young infants.

The supply of milk on a large scale to all classes of the community, under conditions similar to those in force in Copenhagen, is undoubtedly a most desirable end to attain, but it is a scheme which properly belongs to private enterprise, and at present, at any rate, seems to be beyond the legitimate scope of municipal sanitary administration. No legal power exists authorising municipalities to carry on the business of milk purveyors to the inhabitants of the district under their control."

INFECTIOUS DISEASES.—The 2,594 deaths from all causes included 364 from certain infectious diseases. This number was equal to an inclusive death-rate from these diseases of 1.99 per 1,000 persons living, as compared with 1.03, the rate in 1910, and with 1.55, the average rate in the ten years 1901-1910.

The mortality from these diseases in Cardiff was distributed in each quarter of the year 1911 as follows :—

			First Quarter		Second Quarter		Third Quarter		Fourth Quarter
Small-pox ...	...	...	—	...	1	...	—	...	—
Measles ...	...	...	2	...	1	...	2	...	2
Scarlet Fever	...	...	10	...	4	...	2	...	—
Diphtheria	...	...	16	...	7	...	1	...	13
Enteric Fever	...	...	—	...	1	...	3	...	3
Whooping Cough	...	...	1	...	9	...	25	...	18
Diarrhœa ...	...	...	7	...	11	...	208	...	17

In the Registration Sub-districts, the mortality during 1911 from these diseases was as follows :—

						No. of deaths.		Death-rate per 1,000.
East Cardiff	...	...	...	...	...	125	...	2.09
Central „	...	...	...	...	...	113	...	1.96
West „	...	...	...	...	...	126	...	1.93

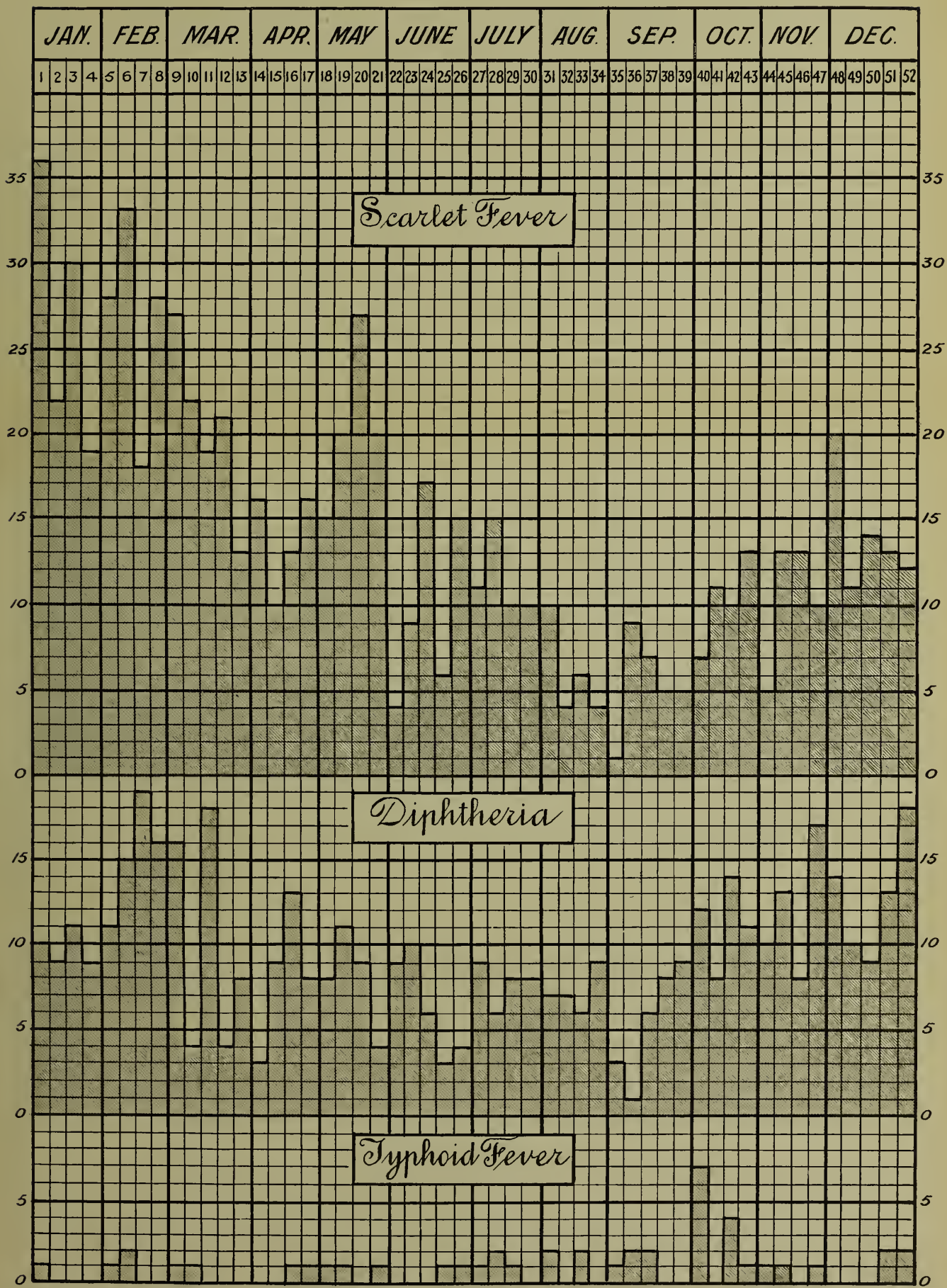
TABLE LIII.

Death-rates from Infectious Diseases per 1,000 persons living in Cardiff :—

		1875—80	1881—90	1891—1900	1901—1910	1911
Small-pox ...	...	0.01	0.03	0.01	0.00	0.00
Measles ...	...	0.46	0.66	0.42	0.34	0.03
Scarlet Fever	...	1.00	0.41	0.17	0.10	0.08
Diphtheria	...	0.11	0.20	0.47	0.20	0.20
Whooping Cough	...	0.55	0.52	0.48	0.31	0.29
Enteric Fever	...	0.37	0.33	0.14	0.05	0.03
Diarrhœa ...	...	0.78	0.93	0.91	0.50	1.32

Chart E

SHOWING THE NUMBER OF NOTIFICATIONS OF SCARLET FEVER, DIPHTHERIA
AND TYPHOID FEVER DURING EACH WEEK OF THE YEAR 1911.



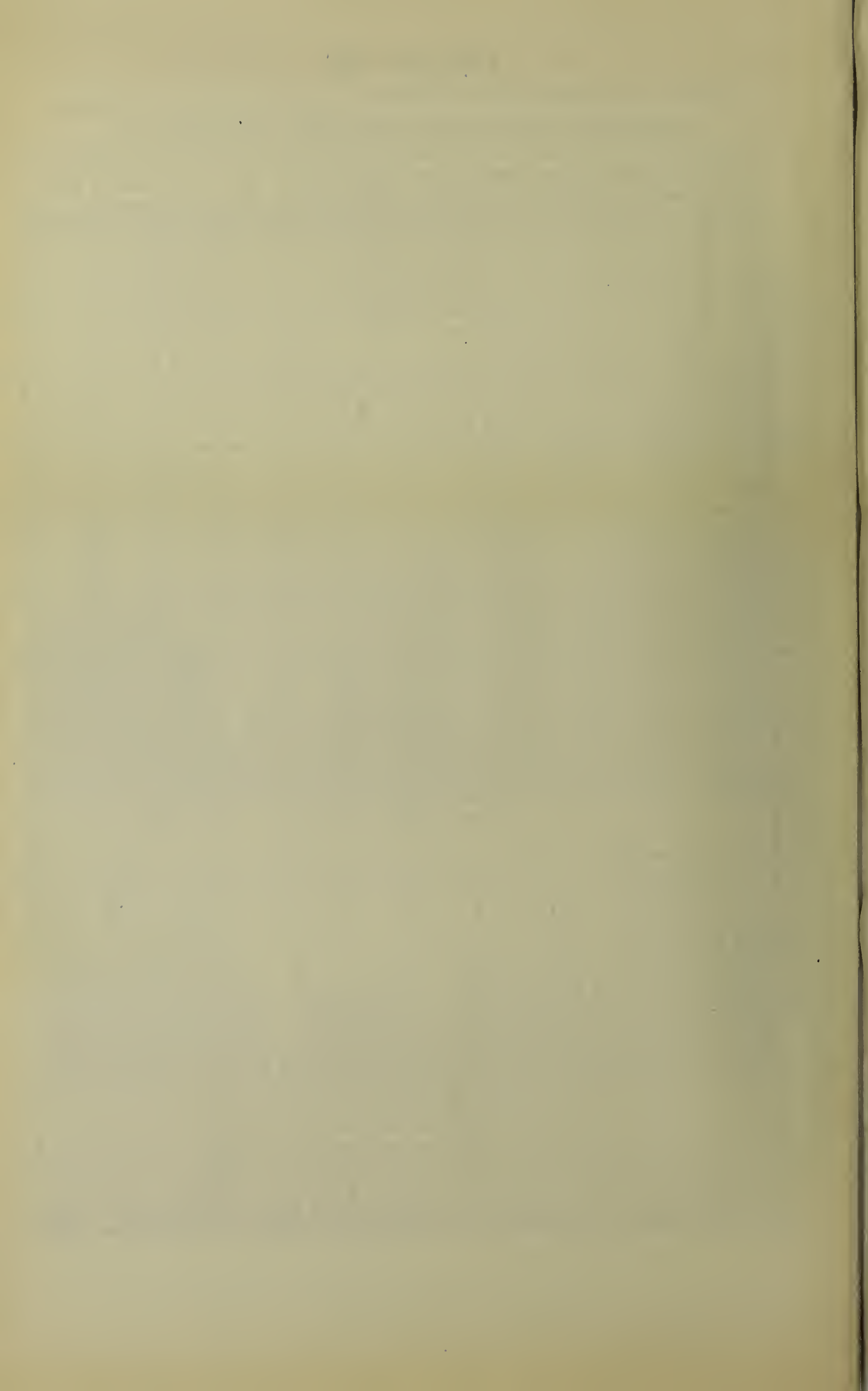


TABLE LIV.

The following table shows the number of cases of infectious disease notified in the City of Cardiff since the adoption of the Infectious Disease (Notification) Act, 1889 :—

Year.	Small-Pox.	Diphtheria (including Membranous Croup).	Scarlet Fever.	Enteric Fever.	Typhus Fever.	Erysipelas.	Puerperal Fever.	Continued Fever.	Totals.
1890	...	72	335	150	—	45	4	2	608
1891	9	70	658	130	—	52	10	—	956
1892	5	164	1,851	118	—	95	12	3	2,248
1893	4	479	816	103	41	152	24	2	1,621
1894	10	343	577	62	1	135	19	3	1,150
1895	1	248	484	79	—	132	17	5	966
1896	45	306	874	74	1	134	21	7	1,462
1897	7	516	758	117	—	163	12	7	1,580
1898	—	960	332	80	—	133	18	6	1,529
1899	—	640	184	94	—	176	13	8	1,115
1900	4	714	383	95	4	106	15	5	1,326
1901	8	734	1,362	73	—	152	16	3	2,348
1902	2	701	1,433	69	—	169	13	7	2,394
1903	65	438	963	100	6	145	20	5	1,742
1904	11	406	658	40	—	112	12	2	1,241
1905	24	327	362	39	—	133	14	3	902
1906	2	333	776	77	—	117	17	1	1,323
1907	16	304	950	62	—	147	16	—	1,495
1908	—	291	475	55	—	167	15	1	1,004
1909	2	283	616	46	—	132	6	2	1,087
1910	1	363	887	36	—	137	8	—	1,432
1911	—	491	753	44	—	127	8	—	1,423

SMALL-POX.—No cases of small-pox were notified in Cardiff during the year. A resident of Cardiff, Captain of the s.s. “Sargasso,” died from this disease in the Port of London Hospital on 9th June, 1911, and this death is included in the vital statistics of Cardiff.

The mortality from small-pox in Cardiff since the year 1875 was as follows :—

YEARS.	DEATH-RATE PER 1,000
1875-80	0.01
1881-90	0.03
1891-1900	0.01
1901	0.00
1902	0.00
1903	0.01
1904	0.00
1905	0.00
1906	0.00
1907	0.01
1908	0.00
1909	0.00
1910	0.00
1911	0.00

I am indebted to Mr. Matthews, the Vaccination Officer, for the following return of vaccinations within the City during the years 1905-1911 :—

TABLE LV.

Year.	Successfully Vaccinated.	Insusceptible.	Postponed.	Certificates of Exemption and Statutory Declarations.	Died Unvaccinated.	Unaccounted for or left the town.
1905	4,422	14	79	65	527	561
1906	3,475	20	101	76	525	810
1907	2,804	13	87	89	418	1,843
1908	3,183	20	87	429	466	894
1909	3,066	18	35	545	369	1,012
1910	2,784	11	69	683	380	597
1911	2,107	25	83	745	416	466

TABLE LVI.

The following table shows the condition as to vaccination amongst the notified cases of small-pox during the years 1906-1911.

Year.	No. of Cases.	No. of Deaths.	Vaccinated in Infancy.	Vaccinated later in life.	Re-vaccinated.	Un-vaccinated.
1906	10	2*	3	2	1	5
1907	15	1†	13	...	2	2
1908	...	...	...	...	...	...
1909	3	1*	1	1	...	1
1910	1	1†	1	...	...	...
1911	...	...	...	...	...	...
Totals ...	29	5	18	3	3	8

* Unvaccinated.

† Vaccinated in infancy.

The figures in Table LV. clearly show the effect of the most recent Vaccination Act, in increasing the number of conscientious objectors to vaccination. The Act had for its object the substitution of a statutory declaration for the certificate of conscientious objection required under Section 2 of the Vaccination Act of 1898. The new Act came into force on January 1st, 1908, with the result that the exemptions from vaccination have increased from 65 in 1905, to 745 in 1911. Obviously the proportion of the population unprotected from small-pox is increasing annually. Those who desire information upon this subject should study the effect of legislation in the opposite direction. Under the German law children must be vaccinated before they are twelve months old, and re-vaccinated in their twelfth year of age. The strict enforcement of this law has resulted in the almost complete extinction of small-pox in Germany, the few cases that do occur being amongst aliens in seaport towns, and these are safely dealt with in general hospitals, as the other inmates of these institutions are protected by vaccination. In that country, therefore, it has been unnecessary to construct and maintain expensive and separate small-pox hospitals.

SCARLET FEVER.—Sixteen deaths were attributed to scarlet fever during the year 1911, being equal to an annual death-rate of 0.08 per 1,000 persons living, as compared with 0.09, the rate in 1910, and with 0.10, the average rate in the ten years 1901-1910.

The mortality from scarlet fever throughout the country was as follows during the year 1911—

						Death rate per 1,000.
England and Wales	...	...	...	...	...	0.05
77 Great Towns	...	...	...	...	...	0.06
136 Smaller Towns	...	...	...	...	...	0.06
CARDIFF	...	...	...	...	...	0.08

The number of cases of scarlet fever notified amounted to 753, distributed as follows in the Registration Sub-districts and in each quarter of the year 1911 :—

Registration Sub-District.		First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Total.	
East Cardiff	128	...	95	...	33	...	54	...	310
Central	„	...	100	...	62	...	29	...	56	...	247
West	„	...	88	...	31	...	35	...	42	...	196
Totals		...	316	...	188	...	97	...	152	...	753

Age periods of persons notified to be suffering from scarlet fever and the percentage proportion of deaths to cases notified in each age period :—

Ages.	No. of cases Notified.		Deaths.		Mortality per cent.	
0—1 year	...	6	...	2	...	33.3
1—5 years	...	215	...	10	...	4.6
5—15 „	...	452	...	2	...	0.4
15—25 „	...	52	...	1	...	1.9
25—65 „	...	28	...	1	...	3.5

Of the 753 cases of scarlet fever notified, 584, or 77.5 per cent. were removed to the Isolation Hospital.

The following table shows the number of cases of scarlet fever notified in each year since 1891, and shows also the attack rate, the death-rate, and proportion of deaths to cases notified, &c. :—

TABLE LVII.
SCARLET FEVER.

Year.	Population.		No. of Cases Notified.		Attack rate per 1,000.		No. of Deaths.		Death rate per 1,000.		Percentage Removed to Hospital.		Mortality per cent. of Cases Notified.	
1891	...	130,283	...	685	...	5.2	...	35	...	0.27	...	—	...	5.0
1892	...	132,895	...	1,851	...	13.1	...	87	...	0.65	...	13	...	4.7
1893	...	136,168	...	816	...	6.0	...	39	...	0.28	...	22	...	4.7
1894	...	139,519	...	577	...	4.1	...	8	...	0.05	...	31	...	1.3
1895	...	142,958	...	484	...	3.3	...	8	...	0.05	...	43	...	1.6
1896	...	146,479	...	874	...	5.9	...	28	...	0.19	...	48	...	3.2
1897	...	150,087	...	758	...	5.0	...	17	...	0.11	...	50	...	2.2
1898	...	153,783	...	332	...	2.1	...	8	...	0.05	...	56	...	2.4
1899	...	157,414	...	184	...	1.1	...	3	...	0.01	...	66	...	1.6
1900	...	161,452	...	383	...	2.3	...	11	...	0.06	...	65	...	2.8
1901	...	165,308	...	1,362	...	8.2	...	29	...	0.17	...	47	...	2.1
1902	...	166,527	...	1,433	...	8.6	...	36	...	0.21	...	48	...	2.1
1903	...	168,303	...	963	...	5.7	...	32	...	0.19	...	63	...	3.7
1904	...	170,098	...	658	...	3.8	...	25	...	0.14	...	72	...	3.3
1905	...	171,913	...	362	...	2.1	...	4	...	0.02	...	75	...	1.1
1906	...	173,747	...	776	...	4.4	...	3	...	0.01	...	74	...	0.4
1907	...	175,600	...	950	...	5.4	...	21	...	0.11	...	72	...	2.2
1908	...	177,473	...	475	...	2.6	...	10	...	0.05	...	78	...	2.1
1909	...	179,359	...	616	...	3.4	...	7	...	0.03	...	79	...	1.1
1910	...	181,284	...	887	...	4.8	...	19	...	0.10	...	78	...	2.1
1911	...	182,729	...	753	...	4.1	...	16	...	0.08	...	77	...	2.1

Scarlet Fever being essentially a disease of childhood, it follows that the majority of cases notified occurred amongst school children, the proportion of cases over 15 years of age being 10·6 per cent of the total number notified. The most fatal time of life was between the ages of one and five years, when 62 per cent. of deaths occurred. The disease was distributed throughout the town with some degree of uniformity, the greater incidence falling upon the Eastern Sub-Registration District. This was probably due to the somewhat larger proportion of young children in this district, and to the presence of some of the larger Public Elementary Schools.

DIPHTHERIA AND MEMBRANOUS CROUP.—Thirty-seven deaths were registered from these diseases during the year, corresponding to an annual death-rate of 0·20 per 1,000 persons living, as compared with 0·12, the rate in 1910, and with 0·20, the rate in the ten years 1901–1910.

The mortality from diphtheria throughout the country in 1911 was as follows :—

					Death-rate per 1,000.
England and Wales	...	...	...	...	0·13
77 Great Towns	...	...	...	...	0·15
136 Smaller Towns	...	...	...	...	0·12
Cardiff	...	...	...	...	0·20

The number of cases of diphtheria notified during the year amounted to 491, as compared with 363 in 1910. The fatality, or proportion of deaths to cases notified, during the year was 7·5 per cent. Of the cases notified, 330 or 67·2 per cent. were removed to the Cardiff Isolation Hospital.

Number and distribution of notifications of diphtheria during each quarter of the year 1911 :—

Registration Sub-districts.				First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Totals.
East Cardiff	...	...	...	64	45	31	79	219
Central „	...	...	...	37	34	33	48	152
West „	...	...	...	49	18	23	30	120
				150	97	87	157	491

The number of notifications and the rate of fatality at various age periods during 1911 are shown below :—

Ages.				Cases Notified.	Deaths.	Mortality per cent. of cases notified.
0—1	year	...	...	2	0	0·0
1—5	years	...	...	116	19	16·3
5—15	„	...	...	291	17	5·8
15—25	„	...	...	42	—	0·0
25—65	„	...	...	40	1	2·5

The following table shows the number of cases of diphtheria and membranous croup notified in each year since 1891, and shows also the attack rate, the death-rate, the proportion of deaths to cases notified, &c.

TABLE LVIII.

DIPHTHERIA AND MEMBRANOUS CROUP.

Year.		Population.	No. of Cases Notified.	Attack rate per 1,000.	No of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1891	...	130,283	70	0.5	16	0.12	—	22.8
1892	...	132,895	164	1.2	36	0.27	—	21.9
1893	...	136,168	479	3.5	93	0.68	—	19.4
1894	...	139,519	343	2.4	59	0.42	—	17.2
1895	...	142,958	248	1.7	46	0.32	3	18.5
1896	...	146,479	306	2.0	55	0.37	3	17.9
1897	...	150,087	516	3.4	90	0.59	15	17.4
1898	...	153,783	960	6.2	129	0.83	21	13.4
1899	...	157,414	640	4.0	61	0.38	46	9.5
1900	...	161,452	714	4.4	81	0.50	53	11.3
1901	...	165,308	734	4.4	78	0.47	47	10.6
1902	...	166,527	701	4.2	88	0.52	46	12.5
1903	...	168,303	438	2.5	36	0.21	51	8.2
1904	...	170,098	406	2.3	31	0.18	47	7.6
1905	...	171,913	327	1.9	23	0.13	56	7.0
1906	...	173,747	333	1.9	13	0.07	56	3.9
1907	...	175,600	304	1.7	23	0.13	59	7.6
1908	...	177,473	291	1.6	22	0.12	62	7.5
1909	...	179,359	283	1.5	14	0.07	62	4.9
1910	...	181,284	363	2.0	24	0.13	68	6.6
1911	...	182,729	491	2.6	37	0.20	67	7.5

The age distribution of diphtheria corresponds closely with that of scarlet fever. In both diseases the chief incidence falls upon children at school ages, and it is evident in both cases that the facilities for infection are increased by the aggregation of children in the elementary schools, at ages when they are particularly susceptible to infection. It would appear from the enclosed tables that diphtheria has of late years assumed a milder form. The fatality amounted only to 7.5 per cent. of the cases notified, and since 1903 never rose above 8.2, whereas during the four years ending 1894, it varied from 17.2 in 1894 to 22.8 in 1891. This reduced fatality may be attributed, to some extent, to modern methods of treatment and diagnosis. The value of the treatment with anti-toxin is generally recognised, although in practice this method might with advantage be more frequently applied. In the Isolation Hospital, this treatment is of course resorted to as a matter of routine, but in the cases treated in their own homes, this is by no means the case. It will be noticed in Table LVIII, that in the earlier period with the heavy case fatality, no cases were removed to hospital, as at that time there was no hospital accommodation for diphtheria patients. Another reason for the apparent reduction in the proportion of fatal cases may be found in greater accuracy of diagnosis which has been brought about by bacteriological methods. Since the provision made by the Sanitary Authority for the free examination of diphtheria swabs in the Public Health Laboratory, advantage has been taken of the facilities offered, and many cases are now diagnosed as diphtheria which formerly might have escaped notice as such. This has, of course, had the effect of increasing the number of cases notified, and therefore of reducing the proportion of fatal cases. Of the 854 cases of diphtheria notified during the past two years, 577 were treated in hospital, with a case fatality of 4.6 per cent., as compared with 277 treated at their homes with a fatality of 12.2 per cent. Recognising the value of the anti-toxin treatment, the Sanitary Authority has, during the past year, supplied the serum free of charge to practitioners applying for it, to be used in cases where the patient is unable to afford this method of treatment. From the tables published by the Metropolitan Asylums Board, it would appear that the mortality per cent. of cases of diphtheria treated in their hospitals has been reduced from 30 per cent. in 1890-3, before the anti-toxin treatment was adopted, to 12 per cent. in 1900-3, when anti-toxin was freely used.

ENTERIC FEVER.—The number of deaths registered from enteric fever during the year amounted to seven, and were equivalent to an annual death-rate of 0·03 per 1,000 persons living. The average death-rate in the ten years 1901–1910 was 0·05. The death rate in 1911 corresponded with that in 1908, 1909 and 1910.

The mortality from this disease in the year 1911 throughout the country was as follows:—

	Death-rate per 1,000.					
England and Wales	0·07
77 Great Towns	0·06
136 Smaller Towns	0·07
CARDIFF	0·03

The number of cases of enteric fever notified during 1911 was 44 ; of these 31, or 70·4 per cent. were removed to the Isolation Hospital.

Of the 44 notified cases of enteric fever, 30 were males and 14 were females. Eleven cases had their origin from outside the city. Upon examination of the premises occupied by persons suffering from the disease, defective drainage or some other sanitary defect was found in fifteen instances. In one of the houses in which cases of enteric fever occurred, three persons were attacked with the disease. In two cases it was stated that the patients had consumed shell-fish shortly before the commencement of the illness.

The number of cases of enteric fever notified since the year 1891 is shown in the following table, which also shows the attack-rate, the death-rate, the proportion of deaths to cases notified, etc.

TABLE LIX.

ENTERIC FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage removed to Hospital.	Mortality per cent. of cases notified.
1891	130,283	130	0·9	26	0·19	—	20·0
1892	132,895	118	0·8	24	0·18	3	20·3
1893	136,168	103	0·7	18	0·13	12	17·4
1894	139,519	62	0·4	7	0·05	1	11·2
1895	142,958	79	0·5	14	0·09	13	17·7
1896	146,479	74	0·5	13	0·08	28	17·0
1897	150,087	117	0·7	20	0·13	34	17·0
1898	153,783	80	0·5	17	0·11	23	21·2
1899	157,414	94	0·5	19	0·12	52	20·2
1900	161,452	95	0·5	25	0·15	47	26·3
1901	165,308	73	0·4	11	0·06	57	15·0
1902	166,527	69	0·4	9	0·05	68	13·0
1903	168,303	100	0·5	14	0·08	76	14·0
1904	170,098	40	0·2	9	0·05	57	22·5
1905	171,913	39	0·2	8	0·04	58	20·5
1906	173,747	77	0·4	13	0·07	69	16·9
1907	175,600	62	0·3	13	0·07	56	21·0
1908	177,473	55	0·3	7	0·03	76	12·7
1909	179,359	46	0·2	7	0·03	78	15·2
1910	181,284	36	0·1	7	0·03	66	19·4
1911	182,729	44	0·2	7	0·03	70	15·9

The following table shows the death-rates per 1,000 from enteric fever in periods since the year 1875 in Cardiff:—

1875—80	1881—90	1891—1900	1901—1910	1911
0·37	0·33	0·14	0·05	0·03

Enteric fever is essentially a water-borne disease. It may therefore be of interest to note the reduction in the mortality of this disease which coincided with the improved water supply of the district. Previous to the year 1852, the only water available was from shallow wells in the gravel, grossly polluted with excremental filth from cesspools and surface drainage. During the period 1853-65, a company was formed, and water was supplied from the River Ely; this underwent some kind of filtration, but was quite unsatisfactory in quality, although superior to that derived from the wells. During 1866-73 the Water Company extended their supply, and constructed works at Lisvane. In 1874-87, water supplied from a well or culvert in the magnesian limestone was substituted for the river water, and most of the shallow wells were closed. In 1888-92, the water was almost entirely derived from the Lisvane and Llanishen works, this water being fairly good in quality, so far as the freedom from organic impurity is concerned, but undesirably hard. During the period 1893-1911, the present source of supply from the Taff Fawr water-shed on the Brecon Beacons was substituted for the Lisvane and Llanishen water, and the water from the Ely culvert was only used very occasionally, in times of deficient rainfall, notably in 1911. This new supply was used in 1893, one reservoir being opened in September of 1892, a second reservoir was opened in September, 1897, and a third is now in course of construction. This water is filtered, and is of great purity and very soft—about four degrees of hardness.

The closure of shallow wells, the construction of sewers and drains, the abolition of cesspools, and the efficient administration of sanitary laws have, of course, had their share in the reduction in the mortality from enteric fever. The first drainage scheme was designed in 1853, by Mr. Hawshaw, and completed a few years after that date. Subsequently, the City Engineer, Mr. W. Harpur, designed and carried out the extensive sewerage and drainage works required by the rapid growth of the town, so that a purification of the soil and of the atmosphere contributed in no small degree to the improvement in the public health of the district.

The following table shows the relation between water supply and the mortality from enteric fever since the year 1852.

TABLE LX.

Period.	Water Supply.	Mean Annual Death-rate per 1,000 (All Causes).	Mean Annual Death-rate per 1,000 (Typhoid Fever).
1852	Entirely Well Water	31·4	2·23
1853-65	Well and Ely River Water	27·4	0·97
1866-73	Well, Ely River, Lisvane, and Llanishen Water ...	23·7	0·91
1874-87	Few Wells, Ely Culvert, Lisvane and Llanishen Water	20·9	0·37
1888-92	Llanishen & Lisvane Water, Ely Culvert Water occasionally	20·4	0·22
1893-1911	Taff Fawr Water, Ely Culvert Water in very dry weather 1911	16·1	0·07

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	0 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	Totals.
Remaining in Hospital 31st December, 1910 :—							
Scarlet Fever	29	96	10	5	—	—	140
Diphtheria	6	18	4	1	—	—	29
Enteric Fever	—	—	1	—	1	—	2
Totals	35	114	15	6	1	—	171
Admitted during the year 1911 :—							
Scarlet Fever	152	371	44	15	8	—	590
Diphtheria	83	196	30	14	8	—	331
Enteric Fever	1	8	10	7	5	2	33
Small Pox	—	—	—	2	—	—	2
Totals	236	575	84	38	21	2	956
Totals under treatment in 1911	271	689	99	44	22	2	1,127
Of the above there were discharged :—							
(a) Recovered—							
Scarlet Fever	152	405	43	17	8	—	625
Diphtheria	73	180	32	13	5	—	303
Enteric Fever	1	7	7	5	4	1	25
Small Pox	—	—	—	2	—	—	2
Totals	226	592	82	37	17	1	955
(b) Died—							
Scarlet Fever	7	1	1	1	—	—	10
Diphtheria	9	8	—	—	1	—	18
Enteric Fever	—	1	2	—	2	—	5
Totals	16	10	3	1	3	—	33
Remaining in Hospital 31st December, 1911 :—							
Scarlet Fever	22	61	10	2	—	—	95
Diphtheria	7	26	2	2	2	—	39
Enteric Fever	—	—	2	2	—	1	5
Totals	29	87	14	6	2	1	139
Totals under treatment in 1911	271	689	99	44	22	2	1,127

Mortality per cent. under treatment :—

Scarlet Fever ... 1.37 Diphtheria ... 5.0 Enteric Fever ... 14.3

B. W. BROAD, M.B., *Medical Superintendent.*

PULMONARY TUBERCULOSIS.—The deaths from all forms of tuberculosis during the year 1911 amounted to 316, including 235 from pulmonary tuberculosis or phthisis. The mortality from phthisis was equal to an annual death-rate of 1·28 per 1,000, as compared with 1·24, the average rate in the ten years, 1901–1910.

The mortality from phthisis and other forms of tuberculosis in Cardiff since the year 1880 is shown in the following table :—

TABLE LXI.

Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).	Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).
1880	177	89	3·21	1896	203	114	1·38
1881	176	77	2·96	1897	206	131	1·99
1882	187	68	2·86	1898	203	117	1·32
1883	186	58	2·67	1899	208	119	1·32
1884	223	55	2·97	1900	212	110	1·25
1885	241	107	3·58	1901	179	122	1·05
1886	214	67	2·78	1902	224	98	1·34
1887	210	75	2·72	1903	217	93	1·28
1888	211	93	2·80	1904	246	98	1·44
1889	224	108	2·79	1905	235	103	1·36
1890	231	142	3·18	1906	229	95	1·31
1891	239	124	2·78	1907	220	91	1·25
1892	242	127	1·82	1908	218	94	1·22
1893	230	151	1·68	1909	234	74	1·30
1894	227	134	1·62	1910	216	88	1·19
1895	242	127	1·67	1911	235	81	1·28

TABLE LXII.

Death-rates from Phthisis per 1,000 persons living in the several Municipal Wards :—

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
CARDIFF ...	1·05	1·29	1·19	1·36	1·28	1·20	1·15	1·09	1·19	1·08	1·28
Roath Ward ...	0·60	1·01	0·70	1·45	1·12	0·74	0·72	0·71	0·96	1·18	1·11
Park „ ...	1·10	0·60	0·80	1·01	0·89	0·69	0·79	0·82	0·95	0·92	1·24
Splott „ ...	0·50	0·90	0·60	0·54	0·96	1·12	0·59	0·81	0·69	0·76	1·19
Central „ ...	1·20	1·60	1·60	1·83	1·43	1·23	0·62	1·22	0·81	1·77	3·44
South „ ...	0·90	1·90	1·30	2·15	1·30	1·15	1·54	1·53	1·40	2·50	2·86
Cathays „ ...	0·30	0·50	0·70	0·84	0·88	0·67	0·75	1·04	0·72	1·02	0·86
Adamsdown Ward ...	0·90	1·10	1·50	1·03	0·95	1·96	1·59	1·09	1·42	1·24	1·21
Riverside „ ...	0·70	1·70	0·50	0·66	1·00	0·94	1·00	1·48	0·60	1·27	0·80
Canton „ ...	0·70	0·40	0·50	0·88	1·17	0·78	1·02	0·76	0·98	1·05	1·04
Grangetown „ ...	0·70	0·70	1·10	1·27	1·21	1·34	1·10	0·90	1·09	1·08	0·90

The continuous decline in the rate of mortality from this disease in Cardiff since the year 1875 is shown in Chart F. Chart G. shows the mortality rates amongst males and females respectively for a portion of the period.

The mortality from diseases of the respiratory organs, other than phthisis, is also included in Chart F. for the following reasons. In the earlier part of the period to which the chart refers, owing to imperfect methods of diagnosis and to carelessness in certifying and registering deaths, many cases of fatal illness were attributed to phthisis which should more properly have been referred to other causes. Any chronic chest affection usually received the name of consumption, and deaths from such affections

would be registered as due to phthisis, although in many instances they should more properly have been included amongst the deaths from diseases of respiratory organs, other than phthisis, such as bronchitis and pneumonia. The readings of the chart are therefore subject to this probable source of error, and some allowance must be made for the transference from phthisis to diseases of the respiratory organs, resulting from the more accurate statement of the causes of death which has taken place in recent years.

For these reasons the decline in the rate of mortality from phthisis, although undoubtedly considerable, is probably not so great as would appear from these readings. It must also be borne in mind that in the earlier years the proportion of uncertified deaths (deaths not certified by medical practitioners) was much higher than it is at the present time, and that many such deaths would be incorrectly attributed to consumption by ignorant relatives of the deceased. In this connection it is of interest to note that even at the present time the proportion of uncertified deaths is found to be greatest in certain Welsh counties in which the death-rate from phthisis is excessively high. It is possible, therefore, that this high rate may be due to some extent to this cause. It is impossible to apportion the exact share to each of the several measures of sanitary administration which have between them contributed to the decline in the phthisis death-rate. Improved drainage, decrease in overcrowding, closure and demolition of insanitary houses, and education of the people have all doubtless had some share in reducing the amount of phthisis in the district. In many respects Cardiff is favourably situated, in being a new town with wide streets, plenty of open spaces, good drainage, and an efficient sanitary administration, in which, therefore, the incidence of pulmonary phthisis should be comparatively small. In connection with the development and spread of this disease, personal and domestic hygiene play quite as important a part as municipal sanitation, and if any great or permanent reduction is to take place in the phthisis death-rate, it must be as the result of education and improved social habits and conditions of life. It is with this object in view that the most recent developments in treatment have been undertaken, such as sanatorium treatment, Tuberculosis and Tuberculin Dispensaries, the better supervision of home life by Health Visitors, &c., open-air schools, the promotion of physical exercises, and the feeding and clothing of destitute children. It is of the highest importance that pulmonary tuberculosis should be detected in its early stages when the disease is curable. This has been much facilitated since the medical inspection of school children has been systematically carried out, many suspected cases being referred for further or special examination at the Municipal Dispensary.

In March, 1911, Regulations were issued as an "Order" of the Local Government Board, requiring Medical Officers of Hospitals to notify cases of phthisis under their care. This Order came into force in May, 1911. Subsequently, in November of the same year, a new "Order" was issued, coming into operation in January, 1912, making it the duty of every medical practitioner to notify every case of pulmonary tuberculosis occurring in the course of his public or of his private practice.

The following is a statement of the number of cases of phthisis notified to the Medical Officer of Health during the year 1911, under the Regulations of 1908 (Poor Law cases) under those of 1911 (Hospital cases), and under the voluntary system which terminated at the end of that year.

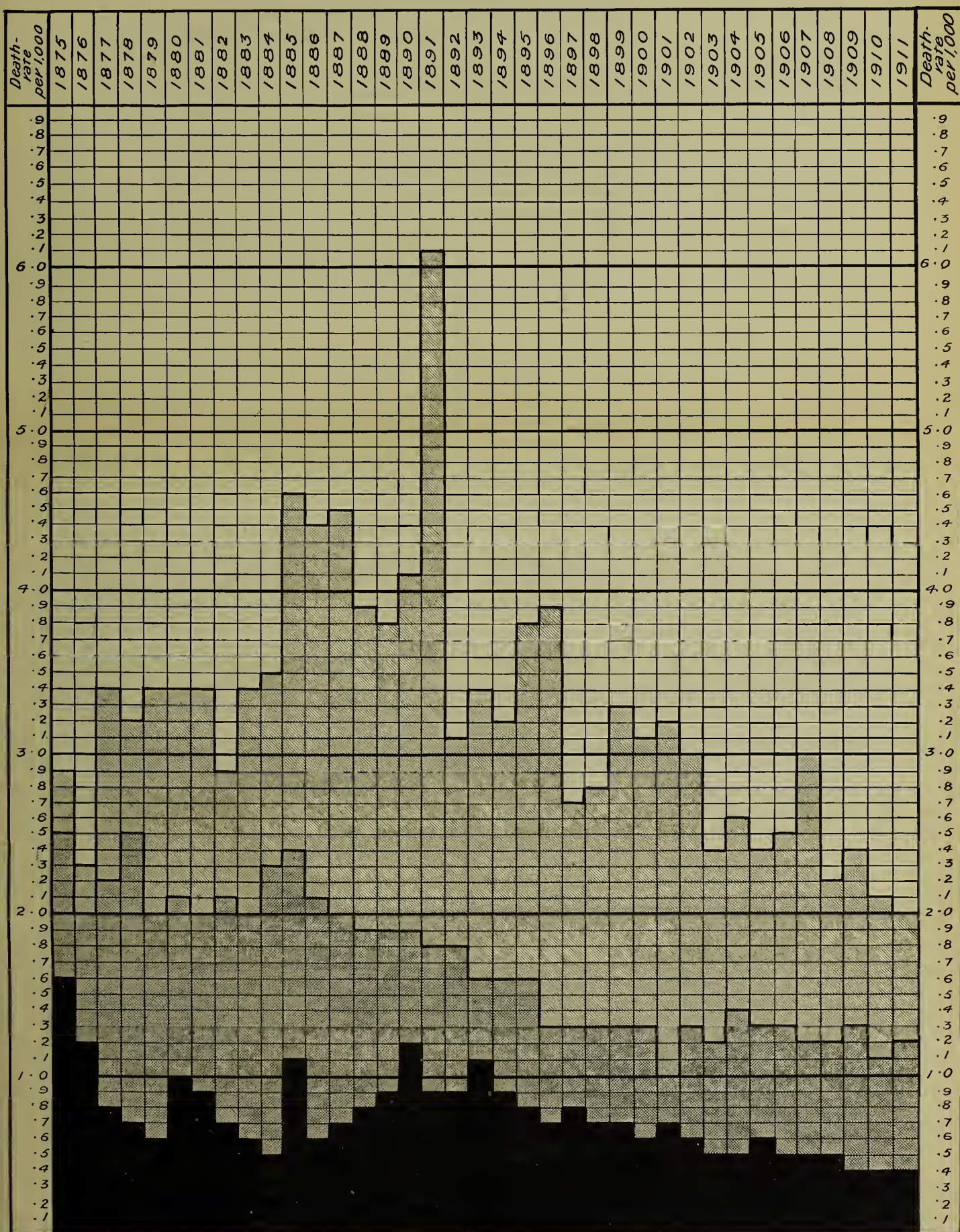
	No. of cases notified at all ages.			
Under Tuberculosis Regulations, 1908	170
" " " 1911	34
Voluntary notification	162
				<hr/>
Total	366
				<hr/>

In a circular letter issued by the Local Government Board, relating to the new "Order" of November, 1911, the Board states that :—

" In certain cases it is no doubt desirable that the local authority should be able to offer sanatorium treatment, and for this the powers of the Public Health Act, 1875, and the Public Health (London) Act, 1891, are available. Under these powers local authorities may either themselves provide sanatoria or may contract for the use of such institutions.

Chart F.

SHOWING THE DEATH-RATES PER 1,000 OF THE POPULATION FROM
RESPIRATORY DISEASES, PULMONARY TUBERCULOSIS AND OTHER TUBERCULOUS
DISEASES IN CARDIFF, DURING THE YEARS 1875-1911



Respiratory Diseases Pulmonary Tuberculosis Other Tuberculous Diseases

" The Board have been advised that these powers also enable a local authority to provide or contract for the use of dispensaries or out-patient hospitals.

" Treatment in an institution is not, however, always necessary or desirable, and there are many cases which, under suitable instruction and supervision, may properly be treated in the patients' own homes.

" Accordingly the Board have, by the Order, given a general power to the local authority, on the advice of their Medical Officer of Health, to supply such medical assistance, facilities and articles as may be necessary for detecting pulmonary tuberculosis, for preventing the spread of infection and for removing conditions favourable to infection. The local authority are also empowered to appoint any necessary additional officers.

" In considering in what ways they can best aid in the control, treatment, and prevention of pulmonary tuberculosis, local authorities should carefully take account of existing agencies.

" Apart from the actual treatment of cases, the Board would again urge on local authorities the great importance of their making full use of their powers of preventing overcrowding, and of securing the removal of any conditions tending to injure the health of persons residing in their districts.

" The financial aspect of the problem has been considerably altered by proposals which have recently been laid before Parliament. Under the Finance and National Insurance Bills it is proposed that a capital sum of one and half million pounds shall be made available for grants for the provision of sanatoria and other institutions. The National Insurance Bill also makes provision for defraying expenses of sanatorium treatment of insured persons, and it is proposed in certain circumstances to enable this treatment to be given to the dependants of the insured."

The new regulations issued by the Local Government Board have now completed the system of notification of cases of phthisis, which forms the basis of all organized measures for controlling the spread of this disease, and it may be mentioned incidentally that these regulations will materially increase the work in the department of the Medical Officer of Health.

The National Insurance Act contains many important provisions, having for their object the prevention and treatment of consumption, and in many ways this Act is likely to become an essential part in public health administration. New and extensive powers and duties devolve upon County Councils and Sanitary Authorities, and the financial sections of the Act are so framed as to encourage these authorities to perform their public health functions in an efficient and complete manner.

The Finance Act sets apart a sum of £1,500,000 for providing or making grants in aid to sanatoria and other institutions for the treatment of tuberculosis or such other diseases as the Local Government Board, with the approval of the Treasury, may appoint, and the Insurance Act provides a yearly sum of one shilling and threepence per insured person for the treatment of such diseases in the manner approved by the Local Government Board. In Wales this grant is to be administered by the Welsh Insurance Commissioners, and the proportion of the £1,500,000 coming to the principality will probably amount to about £80,000. Councils of Administrative Counties and of County Boroughs are empowered to provide treatment for consumptives in sanatoria or other institutions for insured persons resident within or outside their respective areas, and the Local Government Board may form an area of several sanitary districts and a Joint Committee of representatives of such area for the purpose of facilitating the provision of such institutions and of administering the Sanatorium Benefit. Many large towns and local authorities have already provided sanatoria, dispensaries or other agencies for the treatment and control of tuberculosis. Doubtless such provision will in many cases be extended so as to be available for the insured as well as for the uninsured. Obviously it would be great waste of public money to provide separate sanatoria and dispensaries for the insured and the uninsured, and it is unlikely that the Insurance Commissioners or Local Government Board would sanction any such arrangement

In Cardiff, for instance, the Municipal Tuberculosis Dispensary recently established will be available for the insured suffering from phthisis, but probably the Sanitary Authority will see the advantage of combining with the Glamorgan County Council or the outside authorities in the establishment of a joint area for the administration of the Sanatorium Benefit, the provision of a Sanatorium, a Dispensary, and all the other necessary agencies, bearing in mind always the absolute necessity of associating this provision with the general public health administration of the Local Authorities concerned, so as to unite the various preventive measures into one comprehensive and completely organized scheme under the control of the health authority.

The control of tuberculosis differs in no essential principle from the control of other diseases. Both are obviously matters for public health authorities, who may, however, if they think such a course desirable, avail themselves of the co-operation of voluntary agencies without in any way relinquishing their own responsibilities and duties or the general control over the measures adopted.

Sanatorium Benefit is defined in the Insurance Act as "treatment in sanatoria or other institutions or otherwise when suffering from tuberculosis or such other disease as the Local Government Board with the approval of the Treasury may appoint." It is administered by the Local Insurance Committees, who may make arrangements to the satisfaction of the Insurance Commissioners for the treatment of the insured in sanatoria or other institutions provided by Local Authorities, which institutions such authorities are empowered to provide under the Act. The sum of one shilling and threepence for each insured person in the district served by the institutions, being the "benefit" contributed towards the expenses incurred by the Local Authorities in providing this treatment.

The amount of sanatorium treatment required for the insured alone may be roughly estimated upon the basis of the phthisis death-rate. It is usually assumed that the number of new cases occurring annually corresponds with the number of deaths. The death-rate from phthisis amongst the insured would probably correspond closely with that of the whole community, and it has been estimated at 1.9 per 1,000 among the members of all the Friendly Societies in England and Wales. This rate would give 114 deaths annually amongst 60,000 insured (the approximate number of insured in Cardiff). Allowing three months stay in a sanatorium for each case, 28 beds would be required for the insured residing in Cardiff.

The problem of dealing with tuberculosis involves much more than this, as the segregation in a hospital of the advanced cases is an essential part of any complete scheme; such advanced cases would be greatly in excess of the new cases, and would probably include a large proportion of uninsured persons. Such hospital treatment need not, however, be entirely distinct and separate from the sanatorium treatment, separate wards or pavilions in the same institutions being all that is necessary.

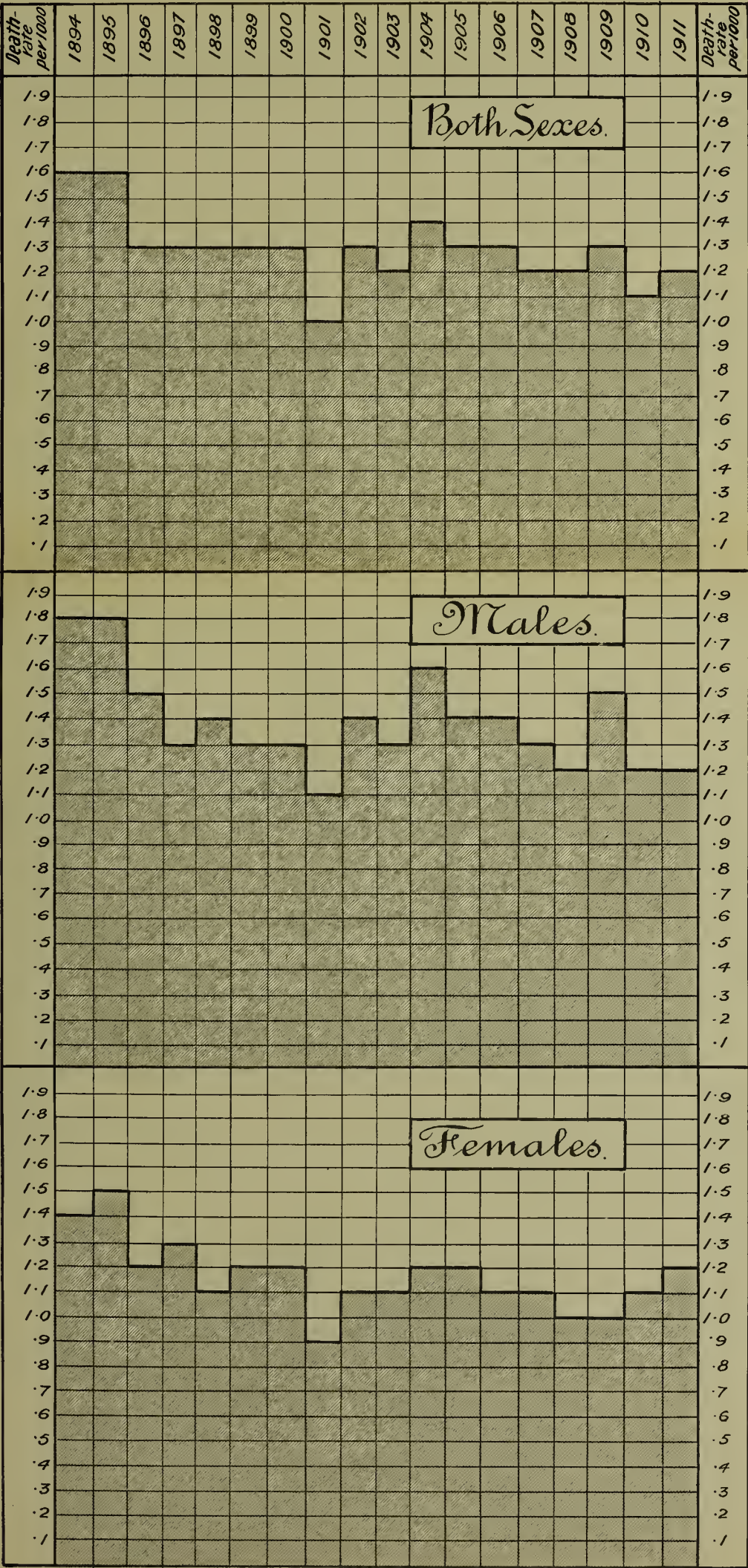
It is probable that Boards of Guardians will for some time to come continue to make provision for advanced cases of phthisis amongst paupers, and in this case a certain amount of overlapping must occur in connection with any general scheme of prevention.

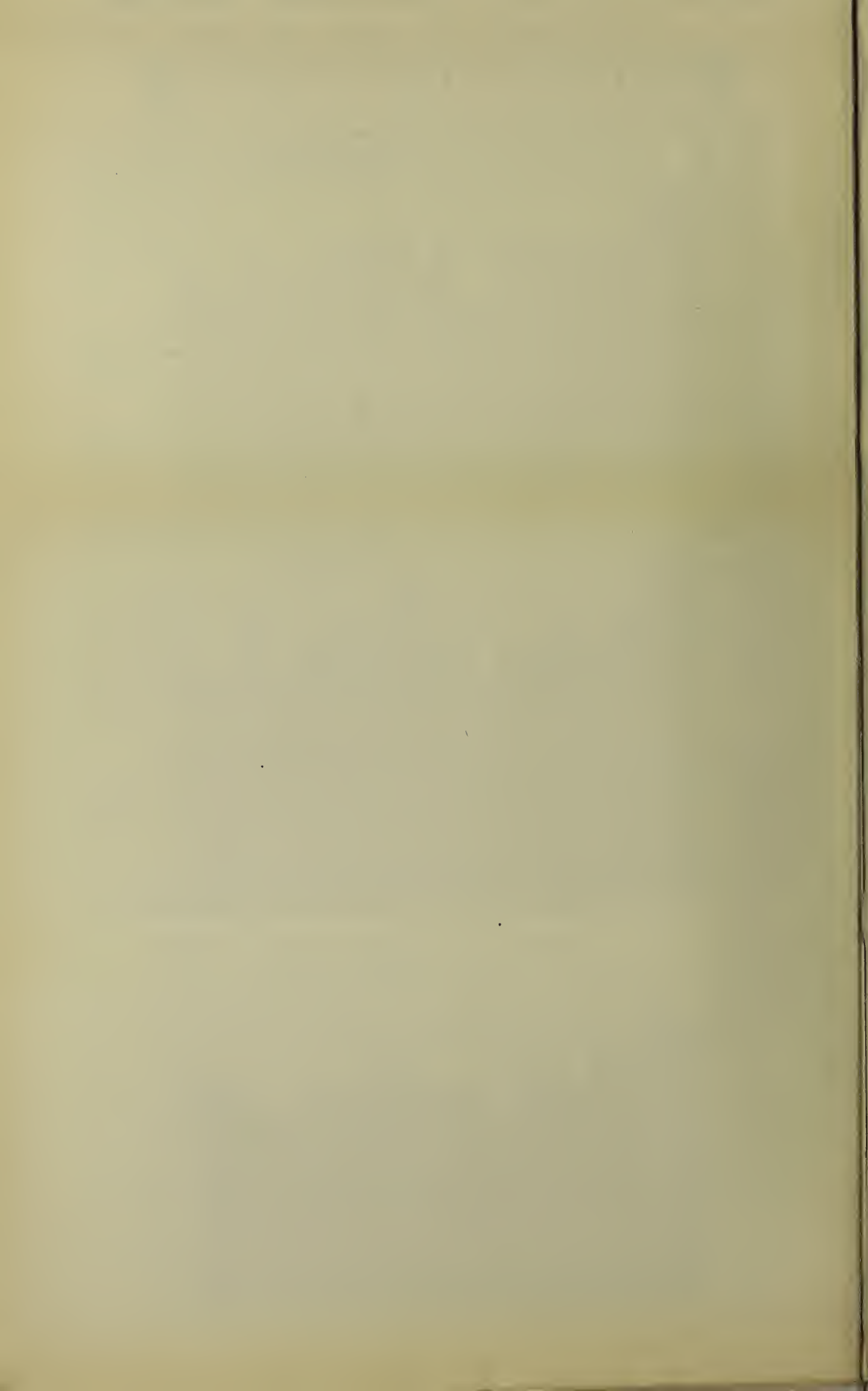
A scheme of this kind would comprise under one organization:—

- (1) Complete notification of pulmonary tuberculosis as the basis upon which all preventive measures would rest.
- (2) A Tuberculosis Dispensary to be carried on in relation with sanatorium, hospital, or home treatment, and with domiciliary visits by the Medical Staff and Health Visitors.
- (3) Sanatorium for early adult cases.
- (4) Hospitals for the treatment and segregation of advanced cases.
- (5) A farm colony for working patients, either as a separate institution or preferably in connection with the Sanatorium.
- (6) Open-air schools, either residential or day schools, at which early or incipient cases of phthisis would continue their education under circumstances favourable to their complete recovery.

Cardiff

SHOWING THE DEATH-RATES FROM PULMONARY TUBERCULOSIS
IN CARDIFF DURING THE YEARS 1894-1911.





The actual measures which are now being undertaken in Cardiff consist in the notification of the disease, the visitation of selected cases notified, the disinfection of infected articles and premises, the distribution of spit bottles, the instruction of those requiring instruction by means of the visits of Health Visitors, the cleansing and disinfection of premises, &c. after death or removal, the treatment by Tuberculin and otherwise of cases attending the Municipal Dispensary, the visitation, instruction, and continued medical observation of such cases, and the free bacteriological examination of sputum in suspected cases at the Cardiff and County Public Health Laboratory. Voluntary associations, such as the Charity Organisation Society and other associations, act in close relationship with the Municipal Health Department.

The Municipal Tuberculosis Dispensary was opened on the 1st October, 1910, and has been well attended since that date. The Dispensary is in the Department of and under the general supervision of the Medical Officer of Health. Dr. E. F. Thomas, Assistant Medical Officer of Health, acts as Medical Officer to the Dispensary. Miss Gertrude Wade is the Dispenser and Health Visitor, and W. H. Alderman, Clerk in the office of the Medical Officer of Health, acts as Clerk and Assistant. Dr. Elizabeth Elder also assists in visiting the homes of tuberculous patients, as part of the work carried out by her in the Department of the Medical Officer of Health. She also directly controls the work of the Health Visitors in connection with the Dispensary.

The Dispensary is open during three evenings in the week at 6 p.m., and it is now found necessary to attend special cases on Saturday mornings.

The following tables, compiled from information supplied by Dr. Thomas, show the amount and nature of the work carried out at the Dispensary since its establishment in October, 1910, up to the end of December, 1911.

TABLE LXIII.

Distribution in Municipal Wards of cases of Consumption that attended the Tuberculosis Dispensary during the period October, 1910, to December, 1911 :—

WARD.						MALES.	FEMALES.	TOTALS.
Central	...	...	...	...	...	38	29	67
South	...	...	...	...	...	39	50	89
Cathays	...	...	...	...	...	77	79	156
Adamsdown	...	...	...	...	...	46	38	84
Riverside	...	...	...	...	...	31	23	54
Canton	...	...	...	...	...	51	57	108
Grangetown	...	...	...	...	...	77	55	132
Roath	...	...	...	...	...	49	26	75
Park	...	...	...	...	...	55	60	115
Splott	...	...	...	...	...	53	64	117
Totals						516	481	997

Non-residents of Cardiff (thirty-three) and non-tuberculous cases are not included in the above table.

TABLE LXIV.

Age periods and sex of Dispensary patients suffering from Consumption :—

AGES.						PERSONS.	MALES.	FEMALES.
All ages	...	...	...	...	...	1,030	544	486
0— 1 year	...	...	...	...	...	4	3	1
1— 5 years	...	...	...	...	...	87	47	40
5—15 „	...	...	...	...	...	466	282	184
15—25 „	...	...	...	...	...	176	80	96
25—65 „	...	...	...	...	...	295	131	164
65 and upwards...	...	...	...	...	...	2	1	1

Non-residents of Cardiff (thirty-three) included in the above table.

TABLE LXV.

Diagnosis of 1,395 patients :—

AGES.		0—1			1—5			5—15			15—25			25—65			65 and upwards.			All ages.		
SEX.		M.	F.	Both Sexes.	M.	F.	Both Sexes.	M.	F.	Both Sexes.	M.	F.	Both Sexes.	M.	F.	Both Sexes.	M.	F.	Both Sexes.	M.	F.	Both Sexes.
Pulmonary Tuberculosis	Definite	...	...	...	6	5	11	127	73	200	34	45	79	81	72	153	1	1	2	249	196	445
	Suspected	2	...	2	11	10	21	100	64	164	40	47	87	49	86	135	...	...	...	202	207	409
	
	Tabes Mesenterica	...	1	2	29	25	54	44	38	82	...	...	...	...	...	...	...	...	...	74	64	138
Other forms ...		...	...	...	1	...	1	11	9	20	6	4	10	1	6	7	...	...	...	19	19	38
Non-Tuberculous		...	9	14	16	18	34	37	46	83	22	58	80	44	105	149	2	3	5	130	235	365
Totals		12	6	18	63	58	121	319	230	549	102	154	256	175	269	444	3	4	7	674	721	1395

Non-residents of Cardiff (thirty-three) included in the above table.

Occupations of 1,030 Dispensary Patients:—

Agent	1	Hairdressers	3
Bakers	5	Hawker	1
Barmen	3	Hotel Boots	1
Blacksmiths	5	Housewives	157
Blindmaker	1	Joiner	1
Boilermakers	6	Journalist	1
Bookbinders	2	Labourers	57
Bottlers	2	Lamp Lighter	1
Cabinet-maker	1	Laundresses	9
Cabman	1	Masons	3
Caretakers	2	Milliners	3
Carpenters	7	Nondescript	74
Carriage-builders	2	Packers	3
Carrier	1	Painters	8
Charwomen	4	Photographer	1
Chauffeur	1	Platelayer	1
Chemist	1	Porters	2
Children under 15 years	510	Printers	6
Clerks	9	Railway Servants	5
Coaltrimmers	4	Salesmen	5
Coalweigher	1	Sawyers	2
Colliers	3	Seamen	5
Commercial Travellers	4	Seamstress	1
Compositor	1	Shoemaker	1
Confectioners' Assistants	2	Shop Assistants	3
Crane-driver	1	Stoker	1
Domestic Duties at Home	17	Stone-mason	1
Domestic Servants	18	Striker	1
Dressmakers	15	Tailor's Presser	1
Drivers	2	Tram Conductors	2
Electricians	2	Tram Driver	1
Engineers	5	Van Driver	1
Errand Boys	4	Wagon Repairer	1
Factory Hand	1	Waitresses	4
Firemen	4	Warehousemen	2
Fitters	2	Wireworker	1
French Polishers	2	Upholsterers	5
Gardener	1		
Goods Checker	1		
Grocer	1		
		Total	1,030

Altogether, 1,984 visits to the homes of patients were made by the Dispensary Nurse—473 during October to December, 1910, and 1,511 during the year 1911.

Number of attendances of patients at the Tuberculosis Dispensary :—

1910.					First Attendances.		Subsequent Attendances.
October	...	...	...	...	126	...	—
November	...	...	...	...	113	...	82
December	...	...	...	...	61	...	84
1911.							
January	...	...	...	...	107	...	167
February	...	...	...	...	144	...	154
March	...	...	...	...	158	...	245
April	...	...	...	...	60	...	189
May	...	...	...	...	117	...	178
June	...	...	...	...	56	...	133
July	...	...	...	...	20	...	16
August	...	...	...	...	83	...	145
September	...	...	...	...	116	...	306
October	...	...	...	...	106	...	353
November	...	...	...	...	74	...	444
December	...	...	...	...	54	...	337
Totals	...	...	...	...	1,395	...	2,833

During July, 1911, the Dispensary was opened only on one evening weekly.

Condition of patients at the end of December, 1911 :—

Much improved	...	...	...	...	37
Improved	...	...	...	...	446
Stationary	...	...	...	...	22
Worse	...	...	...	...	16
Died	...	...	...	...	46
					— 567

Tuberculin Cases.

Much improved—able to work	...	...	...	15
Improved	...	...	...	17
Stationary	...	...	...	8
Attended the Dispensary for consultation only	...	...	...	423
				— 463
				1,030

Tuberculin used for diagnostic purposes :—

Positive.

8

Negative.

5

Tuberculin as an aid to diagnosis has been found exceedingly useful, particularly in children where sputum for test purposes is not readily obtained, and in cases of closed tuberculosis in adults. Both human and bovine forms of tuberculin are used in treatment, and Koch's old human tuberculin for diagnosis. The results of treatment by the extensive method is distinctly encouraging, and fifteen patients who have undergone the full course of treatment are able to undertake work.

The following list shows the number of Dispensary cases which have been received into Sanatoria, Convalescent Homes, etc., and the Institutions that have received such patients :—

Porthcawl Rest	18
Mount Vernon Consumption Hospital Sanatorium, Northwood ...	3
Devon and Cornwall Sanatorium for Consumption, Didworthy ...	6
Dulwich House, Convalescent Home, Cardiff	4
Middlesex Hospital, London	2
Brompton Hospital for Consumption and Diseases of Chest, London ...	4
Clacton-on-Sea Convalescent Home and Sanatorium	1
National Children's Convalescent Home and Orphanage, Holt, Norfolk	2
King Edward VII. Sanatorium, Midhurst	1
Queen Alexandra Sanatorium, Davos Platz, Switzerland	2
The Mount Sanatorium, Bromsgrove, Worcestershire...	2
St. Michael's Convalescent Home, Axbridge, Somerset	3
Metropolitan Convalescent Home for Railway Servants, Weybridge ...	1
Victoria Park Hospital for Consumption and Diseases of Chest, London	1
Treloar's Convalescent Home for Cripples, Alton	1
Worcestershire Sanatorium, Knightwick	1
Sanatorium in Egypt	1
Eversfield Sanatorium, St. Leonards-on-Sea	1
National Convalescent Home, Bournemouth	1

DISINFECTION.—During the year the routine disinfection comprised the following :—

Houses disinfected	1,386
School class-rooms disinfected	28
Articles of bedding, clothing, &c., disinfected	9,909
„ „ „ destroyed	74

Infected premises are disinfected either by fumigation with sulphur dioxide, with formaldehyde, or by means of a spray of formalin. Articles of clothing and bedding are for the most part removed from the house in which the infectious disease occurred, to the temporary disinfecting station in Sloper Road, and submitted to disinfection by saturated steam, at a pressure of 30lbs. on the square inch, in a Washington Lyons' high pressure steam disinfecting apparatus. The unsatisfactory condition of this temporary structure has been commented upon from time to time, and the Sanitary Authority now has the permission of the Local Government Board to borrow money to enable them to construct a permanent Disinfecting and Cleansing Station upon ground adjacent to the Mortuary. Plans for the new Station have been prepared by the City Engineer, Mr. W. Harpur, and have received the approval of the Local Government Board.

CARDIFF METEOROLOGICAL STATION.

The Cardiff Meteorological Station is situated at Penylan, on land belonging to the Corporation (Waterworks Department).

The Meteorological Station is under the control of the Medical Officer of Health. Mr. T. Chant, his Chief Clerk, is the Assistant Meteorologist, and takes the readings of the instruments at 9 a.m. daily and performs all statistical and other clerical work connected with the observations. The 9 p.m. readings are taken by Mr. W. J. Mellings, Caretaker of the Penylan Waterworks and Public Telescope.

The geographical position of the Cardiff Meteorological Station is, Latitude 51° 30' N., Longitude 3° 10' W., and the height of the Station above mean sea level is 203 feet.

The Meteorological Station is recognised by the Meteorological Office, London, and is periodically inspected by an Inspector from that Office, who has on each occasion reported favourably upon the arrangements at the Station, and upon the way in which the observations are taken and the records kept.

The averages with which the monthly rainfall and mean temperatures are compared are those for the twenty-two years 1889-1910, and the sums following the signs + and — in the following Tables show respectively the difference from the average, either above or below.

TABLE LXVI.
BAROMETRIC PRESSURE AND RELATIVE HUMIDITY.

1911.					Mean Barometric Pressure*		Hygrometer*		
					Uncor- rected.	At M.S.L. and 32°F.	Dry-bulb (mean).	Wet-bulb (mean).	Mean Relative Humidity.
					in.	in.	°F.	°F.	%
January	...	...	...	...	30.152	30.363	38.7	37.5	89
February	...	...	...	...	29.995	30.201	41.8	40.1	86
March	...	...	...	...	29.739	29.935	40.5	38.6	85
April	...	...	...	...	29.840	30.029	45.2	42.5	80
May	...	...	...	...	29.835	29.989	55.1	51.7	79
June	...	...	...	...	29.875	30.015	58.5	54.2	74
July	...	...	...	...	30.040	30.164	64.9	58.9	68
August	...	...	...	...	29.862	29.986	64.5	60.0	75
September	...	...	...	...	29.947	30.088	57.5	53.7	77
October	...	...	...	...	29.756	29.921	50.0	47.6	83
November	...	...	...	...	29.517	29.705	43.4	41.4	84
December	...	...	...	...	29.514	29.704	44.0	43.0	92
Means	...	...	...	...	29.839	30.008	50.3	48.3	86

* From observations at 9 a.m. and 9 p.m.

TABLE LXVII.
TEMPERATURE.

1911.					Maximum.	Minimum.	Mean of Maximum.	Mean of Minimum.	Mean Temperature	Difference from Average (22 years).
					°F.	°F.	°F.	°F.	°F.	°F.
January	...	...	...	...	52.7	26.8	43.1	34.3	38.7	+ 0.1
February	...	...	...	...	54.1	23.4	46.0	36.1	41.0	+ 1.2
March	...	...	...	...	55.2	28.5	46.8	35.9	41.3	—1.0
April	...	...	...	...	60.5	27.0	51.6	39.1	45.3	—0.9
May	...	...	...	...	76.2	38.2	63.6	47.2	55.4	+ 3.1
June	...	...	...	...	78.6	42.0	66.8	50.4	58.6	+ 1.3
July	...	...	...	...	91.0	46.0	75.7	55.0	65.3	+ 4.8
August	...	...	...	...	90.9	46.0	74.2	56.6	65.4	+ 5.3
September	...	...	...	...	87.9	39.8	67.0	49.0	58.0	+ 1.7
October	...	...	...	...	62.6	30.0	56.2	44.2	50.2	+ 0.1
November	...	...	...	...	55.2	29.0	48.5	38.1	43.3	—0.9
December	...	...	...	...	52.5	30.0	48.3	39.5	43.9	+ 3.5
					Max. 91.0	Min. 23.4	Mean 57.3	Mean 43.8	Mean 50.5	+ 1.5

TABLE LXVIII.

SOLAR AND TERRESTRIAL RADIATION, UNDERGROUND TEMPERATURE, AND
SUNSHINE.

1911.					TEMPERATURE.				Bright Sunshine.
					Solar Maximum (Mean).	Grass Minimum (Mean).	Underground (Mean).		
							1 ft.	4 ft	
					°F.	°F.	°F.	°F.	hrs.
January	...	...	...	...	63·0	31·8	38·8	43·0	71·1
February	...	...	...	...	71·5	32·8	39·4	41·9	75·5
March	...	...	...	...	84·1	33·0	41·3	43·3	91·4
April	...	...	...	...	101·9	35·3	45·2	44·2	148·5
May	...	...	...	...	113·7	43·1	55·2	49·9	224·9
June	...	...	...	...	117·6	46·9	61·5	56·4	233·5
July	...	...	...	...	127·6	50·3	66·1	59·6	341·9
August	...	...	...	...	121·2	52·5	66·1	62·6	237·1
September	...	...	...	...	110·8	45·0	59·4	60·6	199·7
October	...	...	...	...	92·4	41·3	51·6	55·5	115·4
November	...	...	...	...	76·0	34·5	44·0	50·1	70·8
December	...	...	...	...	66·5	36·1	42·6	46·2	57·1
					Mean 95·5	Mean 40·2	Mean 50·9	Mean 51·1	Total 1866·9

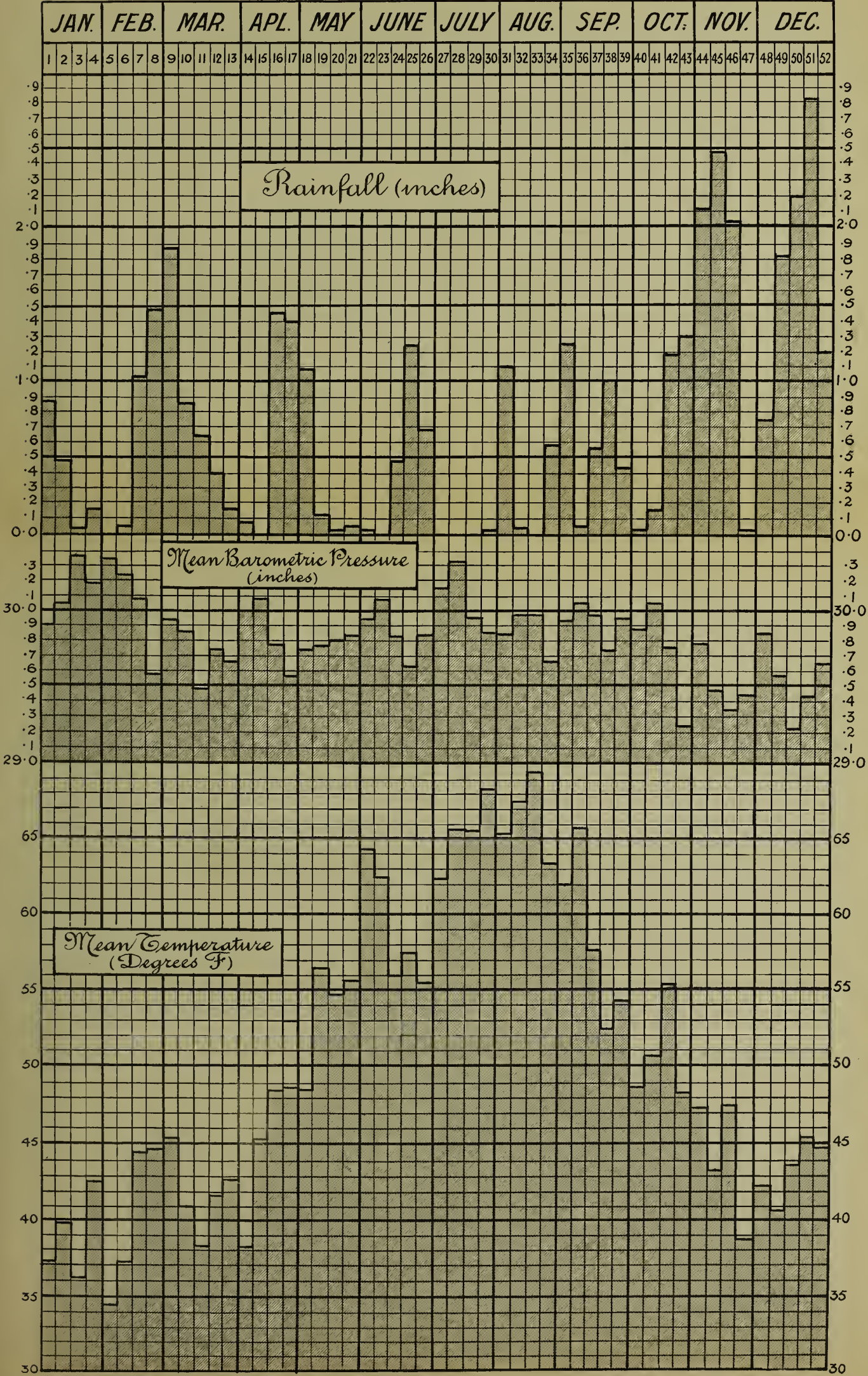
LXIX.

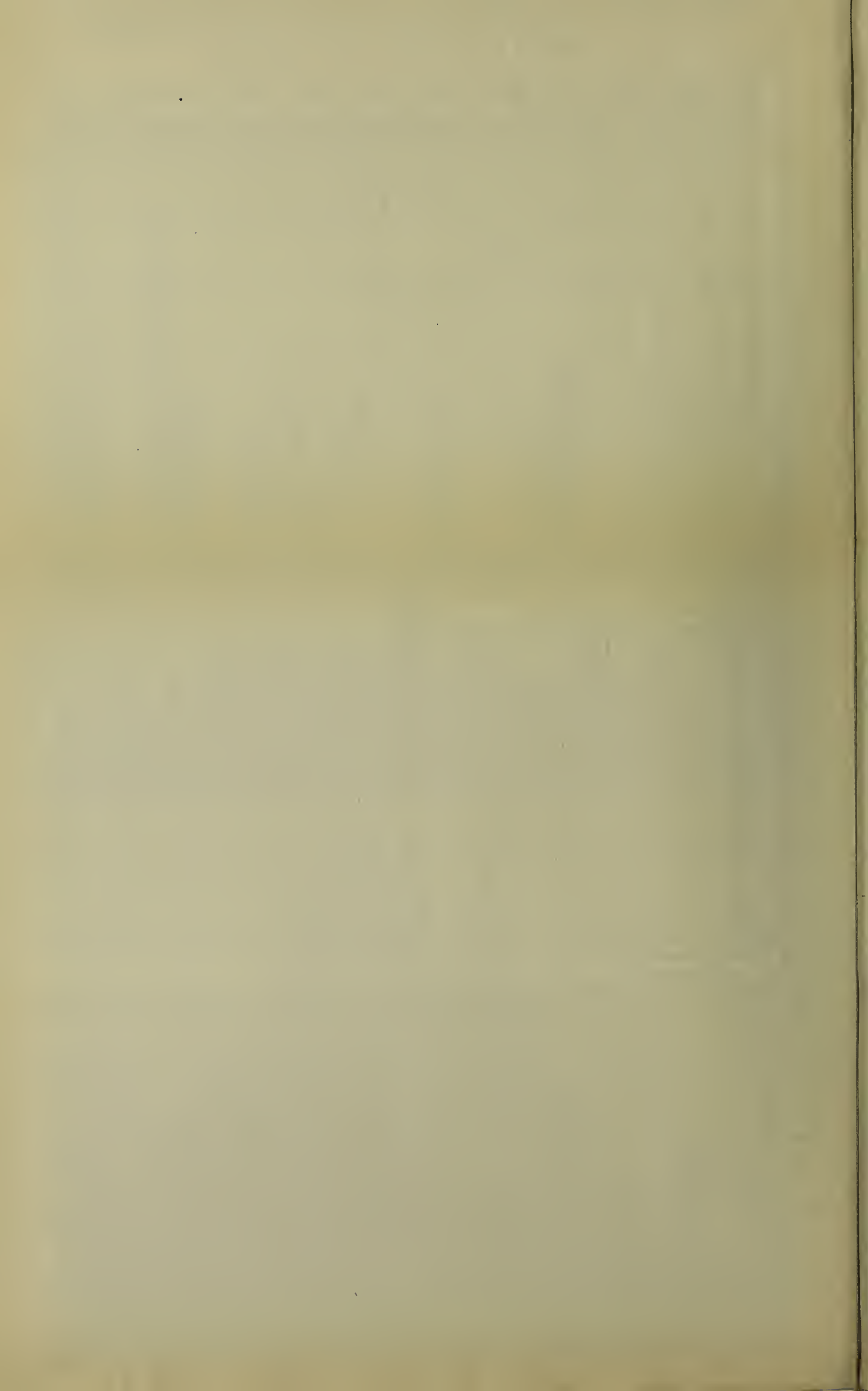
RAINFALL.

1911.					Amount.	Difference from Average (22 years).	*Greatest Fall in 24 hours.	* Date of Greatest Fall.	*No of days with Rain (0.01 in. or more).
					ins.	ins.	ins.		
January	...	...	...	...	1.53	—1.96	0.45	5th	14
February	...	...	...	...	4.21	+ 1.52	1.28	27th	17
March	...	...	...	...	2.23	—0.62	0.52	12th	17
April	...	...	...	...	2.96	+ 0.24	0.94	20th	13
May	...	...	...	...	1.25	—1.08	0.56	3rd	12
June	...	...	...	...	2.39	—0.32	0.60	29th	13
July	...	...	...	...	0.13	—2.46	0.11	30th	3
August	...	...	...	...	2.83	—1.35	0.92	27th	13
September	...	...	...	...	2.05	—0.68	0.53	13th	13
October	...	...	...	...	3.73	—1.12	0.57	21st	17
November	...	...	...	...	6.00	+ 2.58	0.67	11th	24
December	...	...	...	...	8.32	+ 3.87	0.68	22nd	31
					Total 37.63	—1.38	1.28	27th Feb.	Total 187

* 24 hours ending 9 a.m. next day.

SHOWING RAINFALL, MEAN BAROMETRIC PRESSURE AND MEAN TEMPERATURE
RECORDED AT THE METEOROLOGICAL STATION, PENYLAN, CARDIFF,
IN EACH WEEK DURING THE YEAR 1911.





CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.

The following statement, taken from the Annual Report of Mr. J. H. Sugden, M.Sc., F.I.C., Chemist and Bacteriologist to the Joint Laboratory Committee, shows the work carried out in the Laboratory during the year 1911 :—

SPECIMENS AND SAMPLES EXAMINED DURING 1911.

BACTERIOLOGICAL EXAMINATIONS :—

Suspected Diphtheria	...	...	...	...	...	633
Suspected Typhoid Fever	...	...	...	...	...	291
Sputum for Tubercle Bacilli	...	...	...	...	...	329
Anthrax	...	...	...	...	...	9
Diseased Meat	...	...	...	...	...	27
Rats for Plague	...	...	...	...	...	52
Milks for Tubercle Bacilli	...	...	...	...	...	21
Other Examinations	...	...	...	...	...	64
					—	1,426

CHEMICAL EXAMINATIONS :—

Urine Analyses	...	...	...	...	...	289
Milks and Milk Products	...	...	...	...	...	26
Tinned Foods	...	...	...	...	...	10
Air of Schools	...	...	...	...	...	13
Other Examinations	...	...	...	...	...	21
					—	359

DRINKING WATER :—

Bacteriological Examinations	...	...	...	...	...	215
Chemical Analyses	...	...	...	...	...	135
					—	350

SEWAGES AND EFFLUENTS :—

Bacteriological Examinations	...	...	...	...	...	3
Chemical Analyses	...	...	...	...	...	86
Trade Effluents—Chemical Analyses	...	...	...	...	...	89
					—	178
					—	
Total	...	...	...	...	...	2,313
					—	

The total number of specimens and samples examined during the year 1911, amounted to 2,313, as compared with 1,772 in the previous year.

I have the honour to be,

My Lord Mayor and Gentlemen,

Your obedient Servant,

EDWARD WALFORD,

Medical Officer of Health.

APPENDIX.

CITY OF CARDIFF.

LOCAL GOVERNMENT BOARD TABLES. TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1911 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un- corrected Number.	Nett.		Number.	Rate.*	of Non- residents registered in the District.	of Resi- dents not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number.	Rate.*					Number.	Rate per 1,000 Nett Brths.	Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1906	173,747	5,001	5,001	28.7	2,689	15.4	135	64	675	134	2,618	15.0
1907	175,600	4,865	4,865	27.7	2,923	16.6	141	37	639	131	2,819	16.0
1908	177,473	5,172	5,172	29.1	2,610	14.7	136	64	644	124	2,538	14.3
1909	179,359	5,026	5,026	28.0	2,619	14.6	156	86	518	103	2,549	14.2
1910	181,284	4,822	4,822	26.5	2,454	13.5	165	67	537	111	2,356	13.0
1911	182,729	4,744	4,730	25.8	2,671	14.6	189	112	639	135	2,594	14.1

* Rates in Columns 5, 7 and 13 are calculated per 1,000 of the estimated population,

LOCAL GOVERNMENT BOARD TABLE.

TABLE II.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1911.

NOTIFIABLE DISEASE.	NUMBER OF CASES NOTIFIED.							TOTAL CASES NOTIFIED IN EACH LOCALITY.			TOTAL CASES REMOVED TO HOSPITAL.
	At all Ages.	At Ages—Years.						East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.	
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.					65 and upwards.
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	491	2	116	291	42	37	3	219	152	120	330
Erysipelas	127	2	6	8	9	38	53	43	44	40	...
Scarlet Fever	753	6	215	452	52	27	1	310	247	196	584
Typhus Fever ... ..	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	44	...	2	10	12	16	4	8	12	24	31
Relapsing Fever ... ..	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ... ..	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	8	...	...	...	1	7	...	1	3	4	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...
Phthisis { under Tuberculosis Regulations, 1908 under Tuberculosis Regulations, 1911 Others	170	...	...	15	24	84	45	50	88	32	...
	34	...	1	4	5	21	3	10	16	8	...
	162	6	7	33	34	67	14	52	53	57	...
Totals	1,789	16	347	813	179	297	123	693	615	481	945

LOCAL GOVERNMENT BOARD TABLE. TABLE III.

CAUSES OF AND AGES AT DEATH DURING THE YEAR 1911.

CAUSES OF DEATH.		NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
		ALL AGES.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and up-wards.	
1		2	3	4	5	6	7	8	9	10	11
All causes	Certified	2,593	639	115	83	104	104	376	571	601	579
	Uncertified	1	...	...	...	...	1	..	...	...	...
Enteric Fever	...	7	...	...	...	1	1	4	1	...	5
Small Pox	...	1	...	...	...	...	...	...	1	...	...
Measles	...	7	1	2	4	...	...	...	...	...	...
Scarlet Fever	...	16	2	1	9	2	1	1	...	...	11
Whooping Cough	...	53	32	14	5	2	...	...	...	...	...
Diphtheria and Croup	...	37	...	4	15	17	...	1	...	...	20
Influenza	...	18	...	2	...	1	1	3	4	7	1
Erysipelas	...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Fever	...	...	...	...	...	...	...	...	...	...	...
Malarial Fever	...	1	...	...	...	...	...	1	...	...	...
Cow Pox	...	1	1	...	...	...	...	...	...	...	...
Chicken Pox	...	1	1	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis)	...	235	1	...	1	11	41	111	59	11	59
Tuberculous Meningitis	...	28	7	4	2	11	...	3	...	1	2
Other Tuberculous Diseases	...	53	17	7	5	8	4	7	2	3	11
Rheumatic Fever	...	11	...	...	...	3	4	3	1	...	1
Cancer, malignant disease	...	166	...	...	1	1	...	30	75	59	51
Bronchitis	...	158	26	10	4	...	...	6	34	78	26
Broncho-Pneumonia	...	59	28	11	4	...	3	1	5	7	10
Pneumonia (all other forms)	...	120	11	8	2	2	7	26	43	21	27
Other diseases of											
Respiratory organs	...	35	1	2	1	1	...	3	21	6	4
Diarrhœa and Enteritis	...	243	201	26	1	4	...	1	6	4	17
Appendicitis and Typhlitis	...	11	...	...	...	4	4	1	2	...	13
Alcoholism	...	2	...	...	...	...	...	1	1	...	...
Cirrhosis of Liver	...	12	...	...	...	...	...	2	8	2	1
Nephritis and Bright's Disease	...	70	2	...	1	2	4	15	29	17	27
Puerperal Fever	...	2	...	...	...	...	1	1	...	...	...
Other accidents and diseases of Pregnancy and Parturition	...	10	...	...	...	...	...	10	...	...	...
Congenital Debility and Malformation, including Premature Birth	...	176	174	2	...	...	...	...	...	...	9
Violent Deaths, excluding Suicide	...	90	6	4	6	7	7	21	27	12	53
Suicides	...	11	...	...	...	...	3	2	5	1	1
Other Defined Diseases	...	956	126	18	22	27	24	122	245	372	229
Diseases ill-defined or unknown	...	4	2	...	...	...	...	...	2	...	1
All causes	...	2,594	639	115	83	104	105	376	571	601	579

INFANT MORTALITY DURING THE YEAR 1911.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.			Under 1 week	1-2 weeks.	2-3 weeks	3-4 weeks.	Total under 1 month.	1-3 months.	3-6 months.	6-9 months	9-12 months.	Total Deaths under 1 year
All causes	Certified	...	112	40	20	22	194	111	144	107	83	639
	Uncertified	...	...	...	...	...	...	...	...	...	...	...
Small-pox ...			...	...	...	...	...	...	...	...	...	...
Chicken-pox ...			...	...	...	...	...	...	1	...	...	1
Measles ...			...	...	...	...	...	...	...	...	1	1
Scarlet fever ...			...	...	...	...	...	...	...	...	2	2
Diphtheria and Croup			...	...	...	...	...	...	...	...	...	...
Whooping-cough ...			...	...	...	1	1	4	8	9	10	32
Diarrhœa ...			1	3	5	2	11	26	57	46	26	166
Enteritis ...			...	...	3	1	4	11	10	7	3	35
Tuberculous Meningitis			...	...	...	...	...	...	...	4	3	7
Abdominal Tuberculosis			...	...	...	...	...	...	1	2	2	5
Other Tuberculous Diseases			1	...	...	1	2	3	...	4	4	13
Congenital Malformations			6	5	1	1	13	6	1	...	...	20
Premature birth ...			69	11	3	6	89	6	2	...	...	97
Atrophy, Debility and Marasmus			15	6	2	3	26	14	12	3	2	57
Atelectasis ...			1	1	...	...	2	...	...	...	...	2
Injury at Birth ...			1	1	...	...	2	...	...	...	...	2
Erysipelas ...			...	...	...	...	...	...	...	...	...	...
Syphilis ...			1	...	...	...	1	5	3	...	1	10
Rickets ...			...	...	...	...	...	...	2	...	...	2
Meningitis (<i>not Tuberculous</i>)			...	...	...	...	...	4	5	3	3	15
Convulsions ...			6	7	4	6	23	9	7	2	...	41
Gastritis ...			1	2	...	...	3	2	5	1	...	11
Laryngitis ...			...	...	...	...	...	...	1	...	...	1
Bronchitis ...			...	...	...	...	...	4	8	7	7	26
Pneumonia (all forms)			...	...	...	...	...	4	10	12	13	39
Suffocation, overlying			2	...	...	...	2	1	...	...	...	3
Other causes ...			8	4	2	1	15	12	11	7	6	51
Totals ...			112	40	20	22	194	111	144	107	83	639

Nett Births in the year { legitimate 4,538
illegitimate 192

Nett Deaths in the year of { legitimate infants 571
illegitimate infants 68



CITY OF CARDIFF.

ESTIMATED POPULATION

1911 — 182,729.

DIAGRAM SHOWING

BIRTH-RATE (BLUE) } PER 1,000 OF THE ESTIMATED
DEATH-RATE (BLACK) } POPULATION, 1911
DEATHS OF INFANTS UNDER 1 YEAR TO 1,000 BIRTHS (GREEN)
PERSONS PER ACRE (EXCLUDING DOCKS, INLAND WATER
AND FORESHORE) (RED)

BIRTH-RATE FOR THE WHOLE CITY 1911, 25.8

DEATH-RATE FOR THE WHOLE CITY 1911, 14.1

IN EACH
MUNICIPAL WARD

CATHAYS

27.0
12.3
120
57

PARK

20.5
12.4
117
43

ROATH

24.1
13.0
135
23

CENTRAL

22.5
22.1
160
24

CANTON

28.2
12.7
120
49

RIVERSIDE

18.5
12.6
132
66

SPLOTT

30.3
12.9
152
22

GRANGETOWN

33.1
14.2
132
20

ADAMSDOWN

27.4
16.3
117
87

SOUTH

25.4
21.4
213
62

Bristol Channel

CITY OF GARDIFF

ESTIMATED POPULATION

1911 - 185,759

(1911 Census)

1911

1911 Census

1911 Census

1911 Census

1911 Census

1911 Census

1911 Census

1911

1911 Census

1911
1911
1911
1911

1911

1911
1911
1911

DEATHS FROM SPECIFIED CAUSES AT ALL AGES, AND
DURING THE YEAR 1911

[illegible]

